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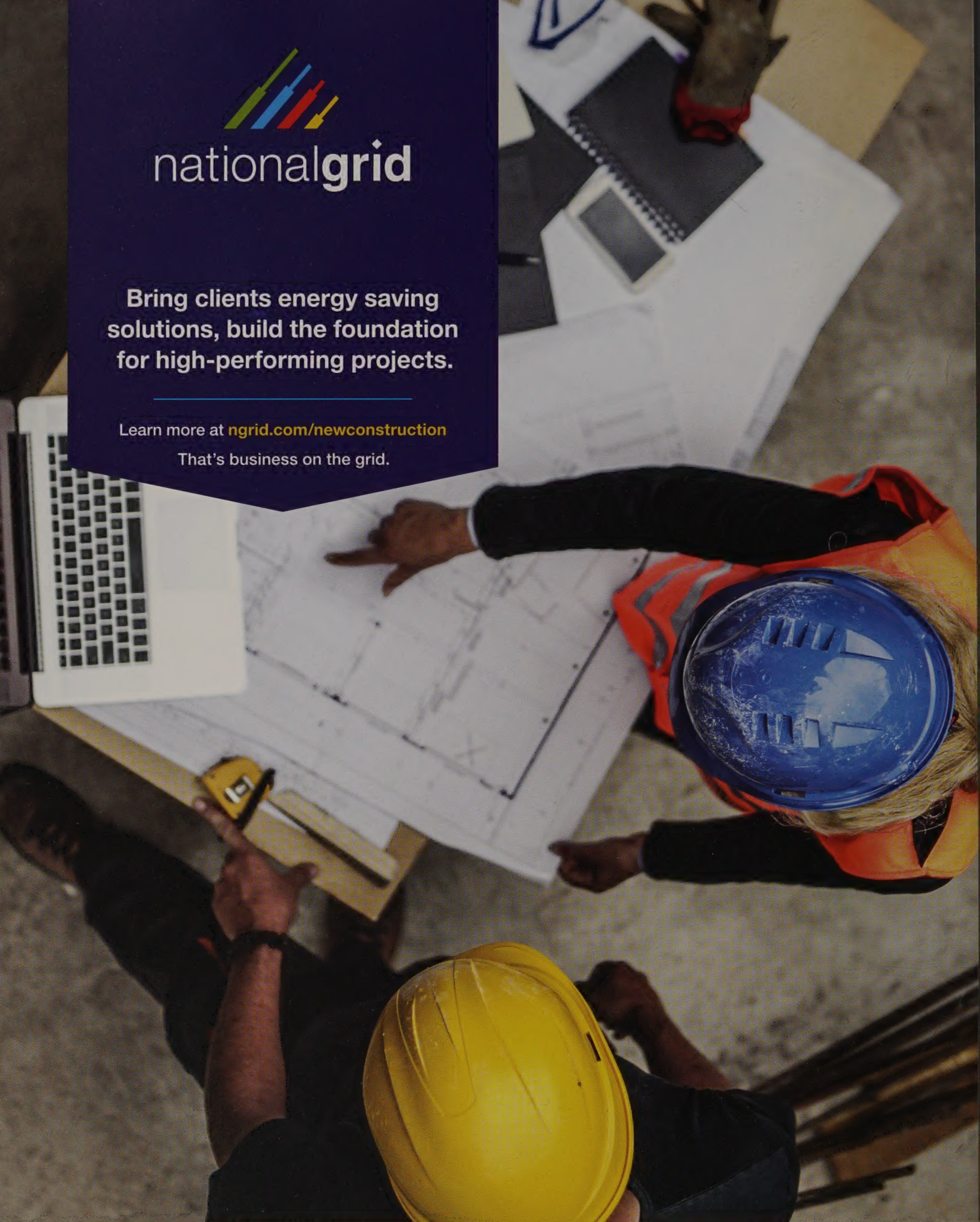
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SALT, CARS, AND FUEL

In the second season of the HBO series *The Wire*, the port of Baltimore takes a starring role. It is depicted as a forbidding place of crime and corruption, where an intransigent longshoremen's union and an overheated real estate market are on track to destroying a way of life on the docks. Everyone is stealing. Piers rust. Containers carry deadly cargo.

Nothing quite as floridly dramatic is besetting the real-life port of Boston today, but some of the same forces are at work. Development and environmental pressures are threatening traditional maritime industries like fishing and shipbuilding. Gritty businesses on the fish pier and rumbling truck traffic landside clash with new residents who like the romance of a working port but not its noisy, smelly reality. Between a growing cruise-ship business, commuter ferries, and pleasure boats, Boston's marine vessels might soon be moving more people than cargo.

Urban waterfronts are the fern bars of the early-21st century: chic, expensive, generic signifiers of gentrification. Last year, the Seaport became the most expensive housing market in Boston, beating out the Back Bay. Millions of square feet of development are in the pipeline. Companies from Vertex to Reebok are moving into glassy new headquarters, bringing with them thousands of well-paid workers looking for the best tuna crudo or espresso martini.

Still, the old industrial port accounts for $4.6 billion in economic activity and 7,000 jobs. Fish processing is a growing industry, thanks to the proximity of Logan Airport and its export markets. Heating oil, jet fuel, and salt move up the Mystic and Chelsea rivers to Everett, and 80,000 cars were delivered to Charlestown's Moran Terminal in fiscal year 2017. Twelve of the world's top 15 shipping companies now list Boston as a port of call, up from five just a few years ago. The economic diversity that the working port provides for the region should not be lightly discounted in the rush to develop "clean" businesses such as boutique grocers and hotels.



Photo: Ben Gebo

This issue of *ArchitectureBoston* examines how to reconcile the competing claims on the city's historic waterfront. It is a daunting challenge, as Dan Adams writes in "Arriving/Departing" (page 32), because the port's industries "function like keystone species in an ecological web." Finding a way to share this priceless resource is a design challenge and an economic imperative.

The ratepayers of Greater Boston spent $4 billion to clean up Boston Harbor, once one of the filthiest waterways in the world. Now harbor seals frolic in clear view of condos selling for $1,000 per square foot. The public that financed the harbor's rebirth deserves to enjoy the benefits. Unfortunately, most of the glittering growth in the Seaport is decidedly private, with grudging bits of green space squeezed in. So far, efforts to bring a public school, a library, or a signature public park to the Seaport have faltered.

That could change with the Walsh administration's interest in redeveloping Dry Dock No. 4, a deteriorating pier that is no longer needed for marine activity. The city is expected to solicit ideas for a public use at the site, and in the gallery beginning on page 38 ("Now docking"), we feature four creative visions from area designers to get the conversation started. The city has an opportunity to do something grand on these 6 acres, where the views, once an eyesore, are to die for.

Whatever is eventually built at Dry Dock No. 4—and anywhere else along the harbor—will need to adjust to another implacable threat: rising seas and violent storms. This is an urgent challenge worthy of its own magazine, and, indeed, we plan to address design for climate change in an issue later this year. Resiliency is the creative interface between human development and the natural world, nowhere more evident than in a 400-year-old port.

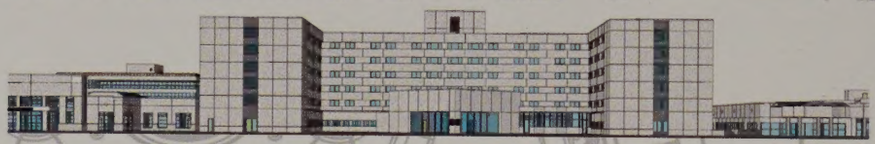
Boston has been able to get rid of its "dirty water" reputation and still retain its identity. Now it needs to show that a clean harbor can also be a thriving place of maritime reinvention. ■

Renée Loth HON. BSA
Editor





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ON "FAB" (WINTER 2017)



It was so good to read Stuart Kestenbaum ("Craft brew") on Maine's Haystack Mountain School of Crafts evolving a relationship with MIT, developing new ways to think about things and new ways to make them. This is Haystack's creative tradition. Kestenbaum mentioned how founding director Fran Merritt partnered with other craftspeople and institutions, including the late Paolo Soleri's Cosanti Foundation. I was there for the program titled "Craftspeople Addressing the Future and the Quality of Life."

I was a young architecture intern then, drawing and building on the construction site that is Arcosanti still, surrounded by men and women who were exploring traditional materials in a new light and making their pursuit of craft a model of behavior. Haystack's program offered weaving, blacksmithing, ceramics, glass, and stonemasonry, an example of which still stands at Arcosanti, 43 years later.

In a 1973 letter to potential Haystack at Arcosanti students, Merritt cautioned them to bring "clothing appropriate for varied temperatures (hot days, cool nights), rain gear, a hat for the hot sun, sturdy shoes, towel, flashlight and whatever else you can think of. Stonemasonry and blacksmithing students should bring work gloves, preferably leather. Special note: We are eager to enrich our time together with materials on art and craft of other cultures—books, objects, even folk music. We will have some things on hand and ask that you have it in mind to bring whatever you can to heighten the experience, providing that these things are not too delicate or valuable."

Haystack continues to pursue a kind of work—craft work—whose very manifestation declares ourselves to be alive. Thanks for reminding us!

JEFF STEIN AIA
President, Cosanti Foundation
Arcosanti, Arizona

D.C. Denison's article, "Economy of scale," examines the emergence of the maker culture and breaks down some of the challenges the movement faces as it navigates forward. One challenge discussed in the piece is that of funding. Inventors who prototype in maker spaces can create amazing products that have potential to do well on the market. How they find the financial means to execute that leap becomes the next problem in the design process. The obvious solutions for this are platforms like Kickstarter and Indiegogo, which present great ideas to the masses and collect substantial funds for makers to take that next step into large-volume manufacturing. They also help expose people who don't produce compelling campaigns. If your product is not properly represented to potential investors, it tanks.

As an educator, this paradigm comes into play all the time. I teach product design at Wentworth Institute of Technology (WIT), where students are always coming up with fantastic concepts. What they lack is money and time to drive their ideas to the next level. Thankfully, WIT has a program called Accelerate that readily funds students to develop their ideas into products and take them to market. Students must prove the validity of their ideas to a committee with a short presentation and a prototype—a far better option than spending months developing a campaign aimed at crowdfunding sites. This program excites me because it helps empower young makers and inventors in a manner that allows them to focus on progressing through school.

Can the maker movement provide a significant impact on the US economy and industry? This can only be answered with time. I do know that fostering the talents of young designers and makers will help advance the conversation. Hopefully more programs like Accelerate will emerge to help the movement gain momentum.

STEVEN LISTWON
Co-owner, Jaywalk Studio
Woburn, Massachusetts

D.C. Denison discusses a number of important considerations for the future of US manufacturing and the maker movement. His emphasis on "a deeply American source of decentralized creativity" resonates with me as an architect and a citizen. It recognizes that creativity can originate from anywhere and from anyone. It also shows ways to effectively capture it.

What may appear unrelated phenomena—such as open sourcing, crowdfunding, and tinkering with everyday products—points to a new social agreement that has begun transforming contemporary culture. These new attitudes toward collectively shared cultural production are driven by technological developments that are democratizing forms of communication, means of production, and ultimately knowledge creation.

While the maker movement empowers designers through direct engagement in the creating of the built environment, it also transforms the relationship between creators and consumers. Users can not only customize products to meet their personal needs but also contribute to the source design. This significantly shifts the future roles of designers from sole content creators to mentors and facilitators of socially and culturally driven creativity.

As Denison points out, companies that are developing open-source, modular designs as a base for a do-it-yourself movement are

noticing this consumer aspiration. Opendesk, for example, allows consumers to download drawings and fabricate furniture themselves or through a network of local fabricators. So-called open making not only helps designers achieve a global presence and distribution but also allows makers to meet customers and customers to have "designer products without the designer price tag." The net gain of this new paradigm goes beyond revitalization of local manufacturing and provides opportunities for increasing society's creative freedom.

ANDRZEJ ZARZYCKI
Associate Professor, College of Architecture and Design
New Jersey Institute of Technology

Blaine Brownell AIA highlights an exciting new material, Zeoform, as a sustainable replacement for plastics in "Organic chemistry." Plastics, he notes, are too often a blight on the planet across their life cycle, consuming approximately 7 to 8 percent of world oil and gas production and involving vast quantities of chemicals that can cause cancer, adversely affect reproductive and developmental health, and disrupt the endocrine system.

In the "Plastics Scorecard" report published in 2014, our organization estimated that plastics consume annually more than 538 billion pounds of known hazardous chemicals, including benzene and styrene; Bisphenol A, or BPA; and vinyl chloride monomer (used to make vinyl). And plastics, being very persistent, are slow to degrade, grossly contaminating our oceans, where they are projected to be greater in weight than all the fish in the oceans by 2050.

New materials such as Zeoform and Ecovative, a sustainable plastic replacement made from mycelium (a component of mushrooms and other fungi), are exciting sustainable innovations to fossil fuel–based plastics. They derive from abundant natural and/or waste materials, do not require hazardous chemicals inputs, and generate significantly less hazardous outputs (though independent research needs to be performed on the waste products from the manufacturing of these materials). They hold the potential to be safely degraded back into the environment.

An important question for any product, including naturally based polymers such as Zeoform and Ecovative, is: What are all the ingredients in the product? Transparency across the life cycles of materials, including chemical inputs and outputs, and clear metrics of biodegradability, will be essential to documenting that these are, indeed, authentically superior sustainable products. Material innovation for sustainability is critical in the building industry, especially in replacing fossil fuel–based plastics with truly more sustainable materials.

MARK S. ROSSI, PHD
Executive Director, Clean Production Action
Somerville, Massachusetts

The five profiles in "Material witnesses" offer insight into people who know their craft—and perhaps more important, know how to work with others. Although the essays focused on individuals and their specific materials of interest (stone, glass, etc.), their work is most compelling when integrated within the complexities of broader building systems. The most challenging and interesting architectural moments emerge at the inevitable intersections of different materials. How do materials with distinct properties and associations interface? These encounters have the potential to be moments of crisis (when the logic of monolithic materiality is compromised and collapses) or, instead, vignettes of tectonic poetry.

It's the work of visionaries like those profiled here that continues to inspire our fabrication research at firms that are pushing the boundaries of architectural practice. Exploring geometric and material relationships by prototyping full-scale architectural elements helps us to produce better design work and communicate it more effectively to our clients, our collaborators, and ourselves.

PARKE MACDOWELL AIA
Fabrication Manager and Associate, Payette
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IN THIS ISSUE

Courtney Humphries and John Duff
("[Re]Invention," page 20)


Photo: Harry Brett

Courtney Humphries is a PhD student in environmental science at the University of Massachusetts Boston and a journalist specializing in science, nature, and the built environment.

John Duff is associate professor of Environmental Law and Policy at UMass Boston, specializing in coastal management and science communication.

Both are affiliated with the Coasts and Communities program of UMass Boston's Integrative Graduate Education and Research Traineeship (IGERT), a transdisciplinary fellowship sponsored by the National Science Foundation.


Photo: Courtesy Harriman

Steven Cecil AIA, ASLA ("Skyscrapers of the seas," page 26) leads Harriman's Boston office and its Planning Studio, located in a historic building once part of the original Central Wharf. His professional practice has included plans and projects for ports, cruise and ferry terminals, commercial fishing facilities, waterfront development, and parks throughout New England and nationally.

In other ports of call, page 28


Photo: Courtesy of Bryan Irwin AIA

Bryan Irwin AIA ("Copenhagen: Iterative and a bit impish") trained as both an architect and a landscape architect. His practice, Bryan Irwin Architects, focuses on institutions and organizations at the intersection of the public and private realms.


Photo: Christopher McCarthy

Amelia Thrall AIA ("Vancouver: Transparency, social and structural") is an architect at ARC/Architectural Resources Cambridge and a volunteer at the Boston chapter of Open Architecture Collaborative.


Photo: Marie Law Adams AIA

Dan Adams ("Arriving/Departing," page 32) is the interim director of the School of Architecture at Northeastern University and a founding partner of Landing Studio, which focuses on designing infrastructural landscapes in cities. Landing Studio has designed port operations, public access landscapes, and events on industrial waterfronts.


Photo: Christian Merfeld/Boston Harbor Now

Alice Brown ("Ferry me home," page 36) is director of transportation at the nonprofit Boston Harbor Now, where she is working to promote and expand water transportation options throughout Boston Harbor. She previously managed Boston's citywide mobility plan, Go Boston 2030, and is an advocate for improving walking, cycling, and transit networks.


Photo: Kat Nania

Terri Evans ("Time's sentry," page 56) is a writer and editor who lives in Natick, where she serves on the town's planning board and the board of the local historical society. She spent nine years as communications manager at Shepley Bulfinch and shares stories of Boston's architectural history and urban development as a guide with Boston By Foot.



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Opinions and Observations



Georgia O'Keeffe: Art, Image, Style

Peabody Essex Museum, Salem, Massachusetts
Through April 1, 2018

As an art history major who minored in painting, I was captivated by the body of work of Georgia O'Keeffe, which was oversimplified in the last decades of her life into a story of enlarged flowers and Southwestern landscape paintings. That, of course, is not the whole story, which this show conveys with a tantalizing, visually powerful dive into the legend, capturing the beautiful dance of influence and inspiration between the painter's work and the artist's image.

As designers, we can relate: There are the persistent jokes about all-black clothing and other details of professional culture that influence our uniforms. Physical presentation, how it relates to the body of work, and the careful curation behind the image is an engaging process, and the exhibition deftly juxtaposes O'Keeffe's artwork with her wardrobe: the early years (sans ornamentation) to her New York period (a black-and-white palette) to the New Mexico years (the surrounding landscape). In that vein, the viewer begins to reconsider her seemingly simplistic uniform—black Stetson, V-neck dress, or denim work smock—as indicative of her Modernist sensibilities.

O'Keeffe's appearance through the lens of her husband, the photographer Alfred Stieglitz, and that of her friends, including Ansel Adams, represent an enduring image of the artist. She actively participated in their compositions, adjusting the garments she wore and letting those assessments echo into her work. The exhibit's first pairing—a painting titled *In the Patio IX* and her Emilio Pucci *Chute* dress—reflects this with perfect clarity. The deep V neckline O'Keeffe favored worked as well on her body, whether in a dress, suit coat, or kimono, as in her art, and it became the ubiquitous formal gesture of her tops.



The show also highlights the role her own hand played in her image. The hemstitch on a series of elegant white blouses is by a master seamstress and feels connected to the nuance she pursues in her flower and skull paintings, at once detailed and elegantly simplistic. There are rows of her favorite Ferragamo flats and Marimekkos, including the classic striped Jokapoika shirt dress (an architect's favorite print for casual wear!). When not in black, she favored restrained tones of sky and earth with simple stitching details or, in the case of a kimono, a spiral pattern that evokes one of her sculptures. This dimensional medium is not often associated with her body of work, but *Abstraction* makes me feel as if I am *in* the center of one of the skulls she collected during her desert walks. Art reflects nature, which in turn resonates in her attire and presentation.

O'Keeffe was a true American original, a fact this exhibit celebrates with a strikingly understated elegance, just like the artist herself.

KAKI MARTIN ASLA is a founding principal at Klopfer Martin Design Group.

ABOVE
Georgia O'Keeffe, Abiquiu, N.M. Photographed with her sculpture, *Abstraction*, by Bruce Weber, 1984. Gelatin silver print, 14 × 11 inches, Bruce Weber and Nan Bush Collection, New York. © Bruce Weber

LEFT
Emilio Pucci *Chute* dress, c. 1954. Black and white cotton, Georgia O'Keeffe Museum. Photo © Gavin Ashworth

Both images: Courtesy Peabody Essex Museum

SEEN

Parker River Wildlife Refuge

Newburyport, Massachusetts

Paths are a consistent subject of my photographs over the years. Sometimes a roadway will catch my eye, the illusion of parallel lines converging recalls constructing two point perspectives in drafting class. I'm also drawn to less rigorous byways where the shortest distance between two points is no longer a straight line.

On a nature trail at the Parker River Wildlife Refuge, rough wood stairs descend an ancient dune to black oak and maple woodlands sheltered from the Atlantic's salt spray and wind. The crooked line of each flight staggering down the dune slope seems haphazard, but this is bespoke trail making. Each uneven trapezoidal landing is an answer to the angle of the stair flight above. At the base of the stairs an elevated boardwalk hovers above the thin topsoil on a few scattered piers, curving around tree boles and knotted roots. Here the journey is the thing, not the speed of travel.

For me, pathways are a simple, well-worn metaphor. We are all from somewhere and going someplace. How fast we get there, and what we see along the way, is different for each of us. Looking at the photo now I don't recall if the image was taken after ascending the stairs or before going down.



PATRICK GUTHRIE AIA
is a principal at Design Associates in Cambridge, Massachusetts.

JUST ONE LOOK

Kragsyde

In the 1880s, when memories of the Civil War were finally a generation in the past and the country's centennial had quickened national pride, the seasons changed. Suddenly, it was summer in America.

Inspired by the picturesque features of the Colonial-era Bishop Berkeley house in Rhode Island, architects such as Charles McKim, John Stevens, Arthur Little, William Emerson, and Robert Peabody set forth to design the beloved American summer house.

Rising first along the Northeast coast, openly nostalgic for a preindustrial past, and attuned to nature but with playful spatial movement and quixotic volumes clad in waterfalls of simple cedar shingles, these buildings became the vocabulary for the architecture of leisure. It would take 70 years for the style to be named "Shingle" by the great teacher Vincent Scully, who died on the day I was writing this.

In Manchester, Massachusetts, especially, many fine examples sat overlooking the open sea, with names as beautiful as the structures themselves: River House, Singing Dune, and the masterpiece, Kragsyde.

Its name no hyperbole, the magnificent home of George Nixon Black clung to a rocky seaside cliff. Deep porches extended beneath its roof, and a jaunty tower sprouted. The legendary porte-cochere, a lovely leaping curve of shingled wood, was a collaborative solution—between Frederic Law Olmsted, who designed the grounds, and architect Robert Peabody—to limited carriage access on the site.

In those days, people like Black would arrive in late May for the season. Collars were loosened, bowler hats exchanged for straw boaters, and summer would begin. Picnics, bare feet, summer reading, and slamming screen doors are not inventions of our century.

Nor is open-mindedness from our time only. Kragsyde was as capable of sheltering its inhabitants as of impressing onlookers. Among the secrets of the house was Black's long and happy gay "marriage," which was lived within its walls.

Sadly, when Black died in 1928, the seasons had changed again, and the 19th-century summer was over. Kragsyde was demolished in 1929.

By 1978, when my husband and I decided to rebuild Kragsyde with our own hands, we were well into a long winter. The upheavals and malaise of that era certainly put us in a mindset similar to the 1880s architects. It seemed to us as we wielded our hammers that we were rebuilding summer, with all of its possibilities. Nostalgia and longing were in the air.

Today, amid another howling winter, as I write this from the endless summer of my own Kragsyde, I urge those who also build houses to consider a bit of what our ancestors knew: nostalgia, ornament, frivolity, amplitude, and the homely cedar shingle, which is as comfortable on a shack as an elaborate cottage.

Whatever season you are working in, build summer.

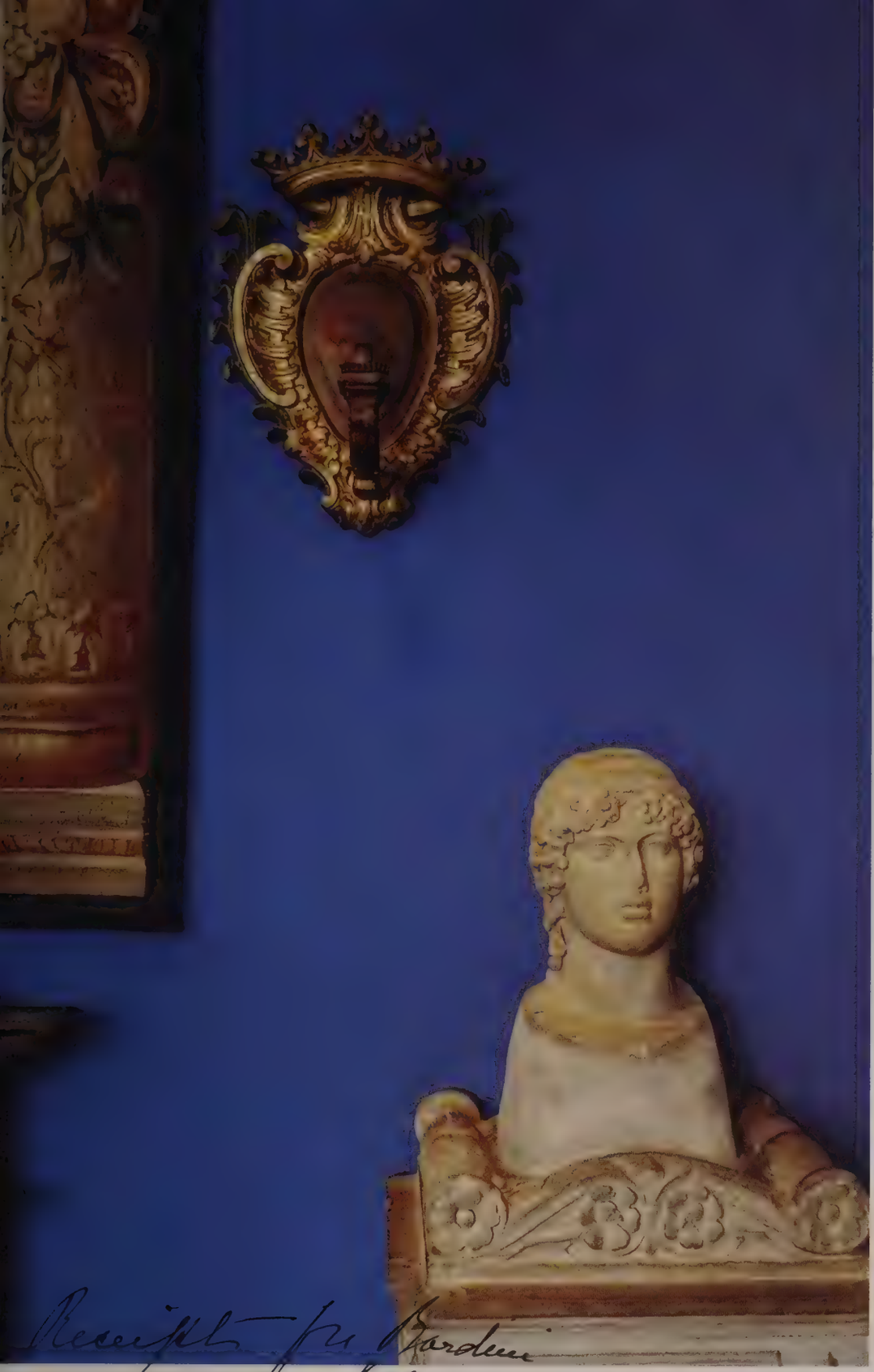
JANE GOODRICH, cofounder of Saturn Press, is the author of *The House at Lobster Cove*, a novel about George Nixon Black. She and her husband re-created Black's shingle-style house in Maine, doing the work entirely themselves.

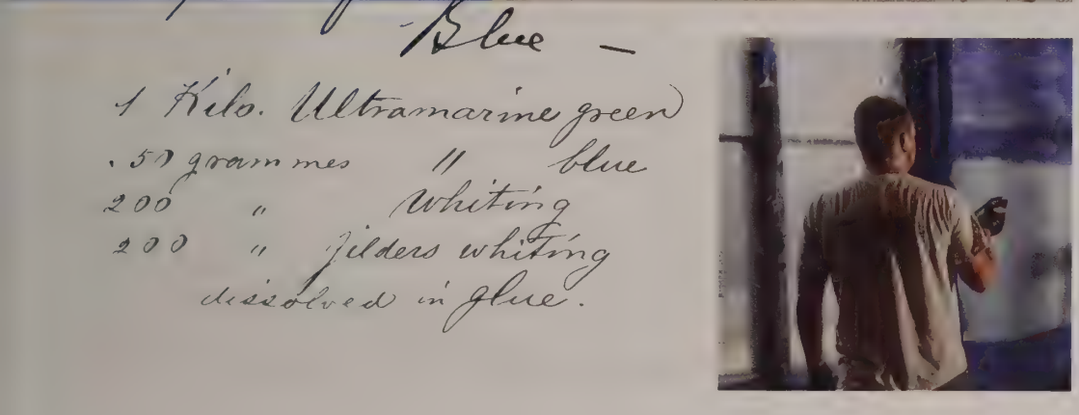
BELOW
Original Kragsyde, in Manchester, Massachusetts. Photo: Courtesy Historic New England

BOTTOM LEFT
The ocean-facing façade of the re-creation, in Swan's Island, Maine. Photo: Bret Morgan









CONSIDERED

Bardini blue

Isabella Stewart Gardner knew from color. Specifically, she adored a vibrant blue on Florentine art dealer Stefano Bardini's walls in Italy so much that she set out to duplicate it for her museum. "She knew this heavenly blue would create a tremendous background for the religious objects in her collection," said the Gardner Museum's chief conservator, Gianfranco Pocobene, "and she was right. This is a color as intense as color can be."

Last fall, the museum began the process of restoring the hue to the walls of the Long Gallery. After discovering traces of the original blue in the gallery and near the museum staircase, Pocobene reconstituted wall scrapings with gelatin and water and then painted the color onto a board. With the help of the manufacturer Keim, Pocobene's team worked iteratively to attain the luminous matte appearance of the original shade. Then, when Keim delivered the paint, "we pulled bags of ultramarine blue to add to the formula," he said, assessing the color's intensity as it dried.

"Think of art through the ages; the fascination was with color. Once in a while today, you'll see a publication come out with 'the color issue,' but there's no real color, just pastels," said Pocobene. For him, Bardini blue connotes royalty. "It's a pigment paint, not like the dyes like you get in a store; it has an intensity that is always astonishing to me." —Fiona Luis

ABOVE LEFT
The completed restoration of the Bardini blue walls.

FAR LEFT
An excerpt from one of the original paint recipes for Bardini blue.

LEFT
The new blue being applied to the museum walls.

Photos: Courtesy Isabella Stewart Gardner Museum

Making Room

National Building Museum, Washington, DC
Through September 16, 2018

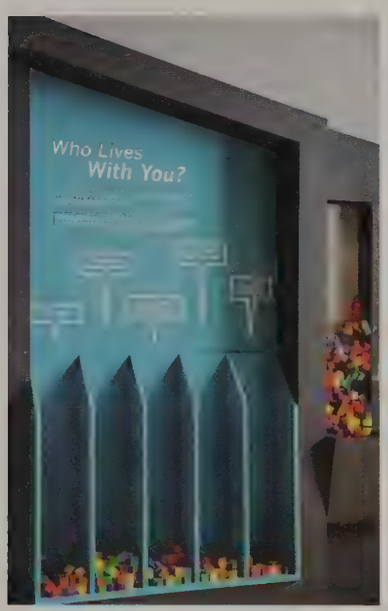
For Sarah Watson, deputy director of New York's Citizens Housing & Planning Council (CHPC) and a curator for the National Building Museum's *Making Room* exhibition, *household* is a loaded word. "You think you know what it means," she says, "then you start to probe and realize it means so many different things to different people."

The curatorial team behind *Making Room* aims to diversify notions of what a household might be through this exhibition, starting with a look at the data of who lives in what kinds of housing. According to CHPC, the idea of the prevalent nuclear family is an outdated one that, despite demographic shifts, continues to pervade housing stock. The largest demographic is singles living alone, who account for 28 percent of households; the nuclear family comes in at just 20 percent, yet the bulk of housing stock—80 percent—caters to this group, with multiple bedroom units.

The exhibition centers on the Open House, a 1,000-square-foot demonstration home that will change configurations over the exhibition run to showcase three diverse modes of living. The Open House's first iteration is geared toward a couple living with two adult roommates; the second envisions a three-generation family of child, mother, and grandmother living in the same space; the last imagines a pair of empty nesters capitalizing on their abundance of space by renting out their excess. In each scenario, spaces expand to become more public, or contract to become more private, by virtue of movable (but sound- and fireproof) walls and reconfigurable furniture designed by the Italian firm Clei. Watson calls the Open House a "three-dimensional, real manifestation of what could be if housing design is allowed to rise up and meet the needs of 21st-century households."

As Boston moves toward its goal of 53,000 new units of housing by 2030, the city would be wise to apply reconfiguration lessons from this exhibition to its own housing stock. The *Making Room* exhibition effectively shows that the best way to create new homes may be to reimagine houses that are already there.

DEANE MADSEN ASSOC. AIA is a Washington, DC–based writer who covers architecture and design.



ABOVE
An interactive survey at the *Making Room* exhibit asks, "Who lives with you?"



RIGHT
Wall murals give voices to contemporary housing concerns.

Photos: Yassine el Mansouri; courtesy National Building Museum



Black Spaces Matter: Exploring the Aesthetics and Architectonics of an Abolitionist Neighborhood

Boston Architectural College
December 1, 2017

The exhibition *Black Spaces Matter* showcased a wide range of media—historical maps to harpoon arrows, immersive 360-degree imagery to virtual reality—but the panel discussion associated with it opened up the conversation to larger issues concerning African American heritage, black neighborhoods, and the greater impact on the architecture and planning communities.

New Bedford was an abolitionist town in Massachusetts, and during its whaling boom, its architecture—Gothic Revival, Federal, Greek Revival, early Italianate homes, and cottages—reflected relative racial tolerance. Parts of the town's black history empower the narratives of such towering figures as Frederick Douglass and Captain Paul Cuffe, who helped colonize Sierra Leone.

Jana Cephas, an assistant professor at the Taubman College of Architecture and Urban Planning at the University of Michigan, and one of the panelists, emphasized that preservation could be used as a tool within the planning and development process to affect a community's growth. Embracing stories of black history and allowing these narratives to play a role in the crafting of space, she said, is a gesture that reclaims black legacy and can evoke a sense of pride for African Americans.

Throughout history, stories of African American heritage have been ignored and overlooked. The act of preserving black narratives allows for them to be recognized and acknowledged. It is these stories that can be put on a platform to educate, inspire, and encourage a community's continued legacy.

CALEB HAWKINS graduated from Wentworth Institute of Technology in 2017 with a master's in architecture and is a cofounder of Metropolitan Society, a creative design agency.

ABOVE
Viewers could explore New Bedford's abolitionist neighborhood at the *Black Spaces Matter* virtual-reality station. Photo: Pamela Karimi; courtesy Boston Architectural College







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PORT

SPRING 2018

What does reinvention mean for the industrial waterfront? This issue of *ArchitectureBoston* contemplates the pressures on the evolving Port of Boston.



Oil Drum, by Courtney Mattison, 2015. Glazed stoneware and porcelain, 24.5 × 24 × 21 inches. Photo: Courtney Mattison

[RE] INVENTION

THE FIGHT FOR BOSTON'S MARITIME FUTURE

by Courtney Humphries and John Duff



When Europeans first settled in Boston in 1630, they relied on a sheltered harbor and navigable waters to gain a foothold in North America. For much of its history, Boston was a maritime city, with its port serving as an entry point for cargo from around the world, as well as an influx of immigrants. In the 20th century, the city's ports helped connect it to expanding global shipping networks as well as rail and interstate transportation on the ground.

Today, commerce moves via myriad modes, and other US ports have dwarfed Boston's in size. So, is Boston still a "port city?"

Certainly, industrial port activities are less visible than they were when the city first blossomed. Cargo no longer arrives downtown; large container ships stop in South Boston, and other cargo and natural gas cruise up the Mystic River. Unlike a city with a bustling gateway such as Seattle, Boston's port activities are on the margins. You could forgive Bostonians for associating the city's maritime activity with sailing and booze cruises rather than container vessels.

The city has grown, and its shape, size, and function have overshadowed the





ABOVE
Crane Matrix #2, by Andrew Neumann, 2016. Digital photograph, LCD module, solid state video; 32 × 24 × 4 inches.

PREVIOUS SPREAD
Cranes, by Andrew Neumann, 2006. Digital photograph, LCD screen, solid state video, miscellaneous electronics, 32 × 20 × 6 inches.

Photos: Andrew Neumann

port and its uses. A cleaner harbor and a construction boom have brought new pressures to the waterfront, as increasingly pricey commercial and residential buildings encroach on former industrial areas. In some cases, development is pushing into legal boundaries that protect port areas and marine industries, raising questions about who should have the right to the waterfront.

But there is still value in the eternal pulse of the tides and the ships that visit Boston's ports. A study commissioned by the Massachusetts Port Authority estimates that port activities contribute $4.6 billion in economic value, which includes direct activity of public and private terminals, seafood processing, and cruise terminals, as well as indirect benefits to shipping-related industries. South Boston's Conley Terminal has seen its shipments grow in volume even as Boston's waterfront becomes a playground of condos and restaurants. And a new dredging project launched in 2017 will deepen the port's channels, helping it compete for giant ships cruising through a newly expanded Panama Canal.

In cities across the country, seaports are being contested and renegotiated. Some ports are deliberately separate: The giant infrastructure of the ports in New York–New Jersey and Los Angeles are fiefdoms of their own. Other ports seem particularly integrated into the fabric of a city. In Seattle, massive cranes

occupy the skyscape and draw the eye to colored containers and the ships that carry them. In Charleston, South Carolina, a multistory cruise ship may temporarily hog the view as it slides into the highly visible cruise terminal.

Boston's port was once centered at Long Wharf; now it's scattered across several miles. Massport runs the large container facility at Conley Terminal in South Boston, as well as a cruise ship terminal, the Boston Fish Pier, and an autoport in Charlestown, which processed nearly 800,000 cars in 2017. Privately owned terminals along the Chelsea and Mystic rivers handle natural gas, petroleum, jet fuel, salt, cement, and bulk cargo.

Boston Harbor is relatively shallow, with an average depth of just 15 feet. The port has long battled that shallowness to clear a path for ships, with channels that have deepened to keep up with changing shipping technology. The most recent major deepening, in the late 1990s, brought the Reserved Channel in South Boston to a 40-foot depth, allowing increasingly large container ships to reach Conley Terminal and help maintain a reasonably competitive port in an economically depressed city.

Now, Boston is again in an underwater competition to maintain its status as a container port, spurred by a recent expansion of the Panama Canal. Completed in June 2016, the canal's new locks can accommodate so-called post-Panamax ships more than 160 feet wide with nearly 50 feet in draft (the former limits were 106 feet in width and 39.5 feet in draft) and carrying nearly three times the cargo.

In 2017, Massport launched a $350 million dredging project with federal and state funding, which will deepen the Outer Channel from 40 to 51 feet, and the Main Channel and Reserved Channel serving Conley from 40 to 47 feet. According to Massport, the new dimensions will help preserve shipping to terminals in Chelsea and the Mystic River while giving Conley the capacity to serve post-Panamax ships carrying up to 12,000 20-foot equivalent units of cargo, with the largest ships taking advantage of high tides to squeeze in. A newly built Dedicated Freight Corridor through South Boston will help speed the landside transportation of a growing volume of cargo in the future, while buffering neighborhood streets from traffic.

Ports must accommodate bigger ships or face a future of diminishing relevance. Cities up and down the East Coast have been investing billions of dollars to carve out channels that will accommodate these behemoths; it's an opportunity to gain market share over West Coast cities, which have dominated shipping from East Asia since the 1980s, by luring post-Panamax ships from Asia directly through the canal.

Harbor deepening, though less visible than a new highway or a major airport, is an alteration of urban infrastructure with economic and environmental consequences. Collectively, harbor expansions help to make the global flow of materials and goods more efficient; if cities are hubs of energy, materials, and consumer goods, an expanding fleet will speed up the "metabolism" of these resources. Locally, dredging projects pose both an opportunity and a gamble for port cities. A port's success does not rely on physical infrastructure alone, but on the dynamics of a vast global economy and competition among neighboring ports.

Is it worth the trouble to keep deepening Boston's channels? The city's port is not an economic powerhouse: According to the US Bureau of Transportation, it ranks 39th in the US in tonnage, well behind other East Coast ports such as New York–New Jersey; Savannah, Georgia; Norfolk, Virginia; Baltimore; and Pittsburgh. But numerical rankings don't fully capture a port's value to a city: the sense of historical identity and the economic and cultural vibrancy of a working waterfront.

Boston is the only New England port capable of handling deep-draft container ships. In recent years, it has lured in more shipping lines from New York–New Jersey to gain a greater share of New England–bound cargo, with a promise of lower landside transportation costs to those markets. Increasingly, more cargo has been hauled in and out of Conley Terminal.

In spite of the continued usefulness of Boston's port, the reality is that if the market were the only factor, its terminals might be swallowed by other land uses.

Boston's port areas owe their viability to a collection of laws and legal doctrines that span millennia. The Public Trust Doctrine, dating back to the Byzantine empire's Code of Justinian, characterizes the sea and shoreline as so important to society that they must be protected

39TH

PORT OF BOSTON'S RANK IN TONNAGE

Source: US Bureau of Transportation

$4.6B

AMOUNT THAT PORT ACTIVITIES CONTRIBUTE IN ECONOMIC VALUE

Source: Massport

74%

OF THE 190-ACRE RAYMOND L. FLYNN MARINE PARK IS RESERVED FOR MARINE INDUSTRIAL USE

Source: Boston Planning and Development Agency



LEFT
Cranes w/ Fan Grilles, by Andrew Neumann, 2006. Digital photograph, fan grilles. 40 × 24 × 2.75 inches. Photo: Ryuji Suzuki

for the public to engage in fishing, commerce, and navigation. That tenet made its way through English common law and into the Commonwealth's Waterways Act of 1866, revised over time and referred to today as Chapter 91. The law protects public access to the shoreline and largely restricts development in tidal areas (even those filled in for centuries) to water-dependent uses.

When coastal waterways were polluted and ports were unsightly, these functions had little interference. But as waterfronts got cleaner, pressures changed. The Coastal Zone Management Act of 1972 offered federal guidance and resources to states to implement coastal management plans, which include protecting port activities. One of Massachusetts' responses was to delineate Designated Port Areas (DPAs) suitable for marine industrial uses, with three essential components: a developed waterfront area capable of supporting commercial navigation; adjacent "backland space" to accommodate the physical layout and use of industrial activity; and land-based transportation links and utility services.

Beginning in the 1980s, state officials carved out DPAs along Massachusetts waterfronts. Out of the 10 current DPAs, the Boston metro area is home to four—in South Boston, East Boston, and along the Mystic River and Chelsea Creek—and each DPA has multiple wharves or terminals. Collectively, they span hundreds of acres of land and acres of water adjacent to them.

The purpose of DPAs is to protect working waterfronts through the rise and fall of a city's economic fortunes. "Port space is a nonrenewable resource and irreplaceable," says Dennis Ducsik, who helped write the rules governing DPAs as the Commonwealth's tidelands policy coordinator from 1985 to 2012. If a port or marine industry gets swallowed up by other uses, it may never come back. "Of course, the market abhors a vacant lot like nature abhors a vacuum," he says, "and there's inexorable pressure to fill the space."

The pressure on Boston's DPAs is acute, particularly in South Boston, where a booming real estate market has brought new offices and residential towers and transformed the Seaport District into a neighborhood of offices, hotels, apartment towers, and restaurants.

In the 190-acre Raymond L. Flynn Marine Park, 74 percent of the land has been reserved for marine industrial use, but much of the bulkheads, docks, and other infrastructure along the shore is unused and degraded, and would require millions of dollars to upgrade. The Boston Planning & Development Agency (BPDA) wants to open up more space for biotech companies and other businesses as part of a revised masterplan for the marine park. Real estate companies Redgate and Hilco Global also hope to redevelop the sprawling former South Boston Edison Power Plant, which also lies in a DPA boundary, into a 2-million-square-foot mixed-use development with a public waterfront park, pending a reevaluation of its DPA status by the state. The development would put residents and workers directly adjacent to Conley Terminal and across from the Black Falcon Cruise Terminal on the Reserved Channel, a move that Massport argues may encroach on the busy shipping area and its expanding infrastructure.

These tensions are not unique to Boston. All over the country, waterfronts are increasingly becoming places where people live, work, and recreate, a shift that can infuse a welcome vibrancy to industrial shorelines. There's a case to be made for bringing people to the water, whether through businesses, homes, or parks and other public spaces—it fulfills the Public Trust Doctrine's goal of preserving the shore for the people.

But waterfront industry also serves a crucial purpose, and it's one that may be dismantled parcel by parcel if not legally protected. Boston's port is still an important part of the city's economy and identity. During boom times, DPAs seem like a hindrance, but that perspective could change. For example, a part of New Bedford's DPA was proposed to be turned over to nonmarine development, but the city instead bet on a new maritime use: the New Bedford Marine Commerce Terminal, a hoped-for hub for a nascent offshore wind energy industry.

A changing climate may bring several feet of sea-level rise to Boston and other coastal cities by the end of the century; much of today's waterfront property may be flooded by then. Maintaining a working industrial port will help Boston's waterfront stay resilient in the face of economic and environmental changes that can't fully be foreseen. The city's maritime past is still an important part of its future. ■

Illustration not to scale

SAFE HARBOR

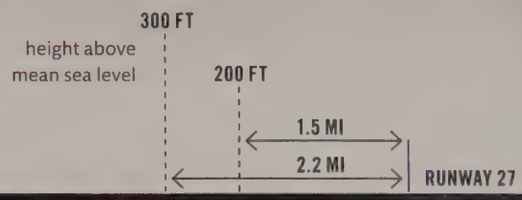
Boston's working port is contested space. With many of its competing uses—from cruise ships to cargo vessels—on the increase, the state's transportation agencies have a lot to manage. This cross-sectional shows crowded corridors on land, sea, and air.

Graphic by **PHILIPP MAUÉ/GAMBLE ASSOCIATES**





LOGAN INTERNATIONAL AIRPORT/ CRITICAL AIRSPACE RESTRICTIONS





FLYNN CRUISEPORT BOSTON





CONLEY TERMINAL

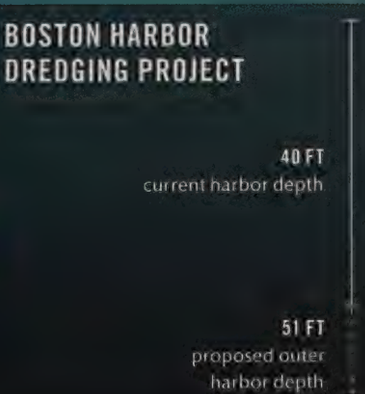




POST-PANAMAX SHIP

160 FT WIDE, 50 FT DRAFT

BOSTON HARBOR DREDGING PROJECT







TED WILLIAMS TUNNEL

the Navigation Channel depth ranges from **30–40 FT** below sea level at mean low tide



SKYSCRAPERS OF THE SEAS

SHIP DESIGN IS A DYNAMIC STORY OF ADAPTATION



by Steven Cecil AIA, ASLA

As architects and urban designers, we are drawn to the edges of our commercial ports. We are called on to design the buildings and facilities that connect the land to the sea. But there is a sea side to port design as well. Consider the role of the naval architects and the shape of their products. Look at any panorama of a commercial port, and focus for a minute on the vessels.

Architects design buildings that are firmly planted in the ground. The structural design primarily resists gravity. Buildings are not supposed to move very much—in fact, limiting the amount of sway in wind and earthquake conditions is a key consideration in tall towers.

By contrast, naval architects design structures that are fully intended to move, even when they are the size of skyscrapers. Their ships must be able to survive *and* maneuver reliably in raging storms and violent seas.

Naval architects are trained to accomplish this. They have their own tradition of education, naval "starchitects," and historic accomplishments, many of which originated here. MIT's naval architecture program was among the first in the nation and remains as one of very few. From the foot of the steps of MIT's domed Building 10 on Massachusetts Avenue, look up. There, on the cornice to the left, "School of Architecture" is chiseled into the limestone. Now look to the right. "Pratt School of Naval Architecture and Marine Engineering" is inscribed on the same level. That department even has its own street entrance, framed by anchors.

Like port architecture, ship design directly reflects the economies and cultures that it serves. The landside and vessel design must also effectively accommodate the available point of contact at commercial ports. This interplay creates a fascinating story of adaptation.

Take the port of Boston. It was an international harbor from the day of its founding, and visiting ships had to contend with the shallow water near the natural shore of the Shawmut Peninsula. Reaching shore was a challenge, so in 1715 all 1,586 feet of Long Wharf were completed, built to dock ships with deep drafts.

But in the same era, many merchant ships were designed by their shipwrights to settle onto the bottom at low tide and then dock at shorter piers when the tide came in. With hulls known as "barks," they were heavily constructed bulk carriers with shallow drafts and nearly straight floor timbers to make grounding them on the bottom easier. They were very maneuverable in the small inlets and harbors of our coast.

Bottoming out was handy, but this type of hull design limited the size, shape, and speed of seagoing ships. As early America's industrial age grew, merchants and manufacturers turned to faster ships with larger capacity—and deeper hulls. In the early 1800s, finger piers reached out from the shore while dredges removed mud alongside of them. Architect Charles Bulfinch helped lead the landside changes with his stone-sided wharf and marble-decorated brick storehouse designs for speculative investors at India Wharf. Many others followed.

Naval architecture seized the trend and took it to its practical limits in the age of sail. Naval architect Donald McKay revolutionized merchant shipping with his clipper ships. They were visually stunning, but their value was in their nautical brilliance. The maximum speed of a displacement vessel is derived from its hull length and shape relative to the fluid properties of water. McKay's ships incorporated sharp, hollowed bows in front of exceptionally long, straight hulls that offered less resistance to the water at high speeds. These stable hulls could take on more sail area on taller masts, adding power to the equation.

Launched from his East Boston shipyard, McKay's ships set records: the largest clipper ship ever constructed, the fastest sailing ship ever built, and the fastest passage from New York to San Francisco—89 days.

But trains could top that, and soon did. Steamboats and steam trains rapidly co-evolved, meeting at tracks' ends. In Boston, more mudflats were filled, shaping South Boston's Fan Pier into a long curve, ideal for railyards. The famous Cunard Line brought steam passenger ships to an East Boston pier built in place of McKay's shipyard. Its massive *Caronia* packed tourists and immigrants efficiently—1,550 passengers in 678 feet of ship.

Still, these were small compared to the supersized cruise ships that ports accommodate today. Boston adapted by converting the former US Army's troop and supply ship World War II departure terminal, now Massport's Black Falcon Cruise Ship Terminal. Its 1,600-foot-long building and even longer dock are more than adequate for these giants. But unlike the past when such floating hotels were iconic features of Boston's harborscape, these great ships are now largely hidden from view, tucked behind the taller, longer former Army dockside warehouse that is now the architect-frequented Boston Design Center.

Ship design, trucking, and railways became aligned in the 20th century with the advent of containerization. As the United States became a prosperous consumer economy, producer nations had to ship vast amounts of goods to our ports. But contemporary regulations effectively block harbor filling to create more land. So, the ships and ports adapted to the harbor edge we had already created.

The hulls of these container ships have open rectangular cross sections to carry boxy containers from the bottom of the hold to high above the deck. The hull size and shape result in immense torsional stresses, as they span waves from any direction. The naval architects and engineers responded with sophisticated torsion boxes running the length of vessels as integral elements of their double hull designs, using welded lateral plates connecting them to resist the torsion moments. It is like solving the famous twisting problem of I.M. Pei's 790-foot John Hancock tower for a ship that is longer than that tower is tall—and with much greater forces at work.

Naval architects have designed torsion boxes to combat stress on today's container ship hulls, the maritime equivalent of solving the twisting problem of I.M. Pei's John Hancock tower.

The international Council on Tall Buildings and Urban Habitat classifies "supertalls" as buildings above 984 feet. They are rising up all over the world, presenting architects with new challenges. And soon, their 1,200-foot maritime equivalents may be coming to Boston, when post-Panamax megaships slide into Massport's docks after necessary dredging is completed.

Because of their greater size, such ships can flex so much that metal fatigue could compromise their structures. The naval architects and engineers must overcome unprecedented torsion "springing" (resonating and twisting with passing waves at a destructive natural frequency).

Unfortunately, the panoramas of our historic central harbor are graced only by reminders of the great ships that once docked at its wharves, like the preserved USS *Constitution* or the occasional visits of the Tall Ships. But keep an eye out for the vessels at the port's active edges, and thank a naval architect for fusing beauty, efficiency, and adaptability in the craft. ■

OPPOSITE
Blueprint plans for Donald McKay's clipper ship, *Staghound*, 1850.

IN OTHER PORTS OF CALL

COPENHAGEN

ITERATIVE, AND A BIT IMPISH

by Bryan Irwin AIA

Walk the waterfronts of Boston and Copenhagen and one cannot help but think that at a thanksgiving gathering of the world's port cities, Boston would be the fusty uncle correcting everyone's table manners while Copenhagen would be the favorite aunt out back playing touch football.

What to make of Copenhagen, that once gritty port city alongside The Sound that now tops many of the world's "best of" lists, from best restaurants to most bicycle-friendly to world's happiest citizens? It was not very long ago that Boston and Copenhagen were more alike than different: similar geographic constraints, city cores choked with automobiles, and waterfronts rimmed with aging and abandoned industrial infrastructure. How did these two cities end up in two very different places?

One feels barely tolerated when walking Boston's waterfront. The entire fabric of the experience is the result of weaving together two threads of thought: accommodate the automobile and give developers the largest parcel size possible. Whatever is left, well, the pedestrians and bicyclists can have that. Open





RIGHT
The harbor baths of Islands Brygge in Copenhagen. Photo: Naotake Murayama, 2015

space consists of a patch of lawn here, a widening of the sidewalk there. Walking along the water's edge is an urban version of Newport's Cliff Walk—one is left clinging to the edge, crowded out by moneyed interests in inscrutable, scaleless buildings.

Copenhagen, on the other hand, is a much more egalitarian and gracious experience. The water's edge is a promenade, not a sidewalk. The buildings and automobiles defer to pedestrians and bicyclists. Perhaps most important, Copenhagen has managed to create urban theater: The waterfront is a stage set for improvisation and dialogue, and the citizens are the actors.

The story of Copenhagen's transformation from industrial relic to next-generation waterfront experience is a story of incremental experimentation, critical self-assessment, political compromise, and a healthy dose of don't-let's-take-ourselves-so-seriously. This improvisational attitude toward reclaiming its waterfront can be traced back to 1971, when residents spontaneously appropriated Christiania, an abandoned military base east of the urban core, as a playground for

VANCOUVER

TRANSPARENCY, SOCIAL AND STRUCTURAL

by Amelia Thrall AIA

LEFT
False Creek in Vancouver. Photo: Karen Lee Photography, 2015

Vancouver's Science World sits twinkling over False Creek, reminding residents of the excitement of a summer 30 years ago, when millions of visitors came for the spectacle of a world's fair along a two-mile stretch of waterfront. Bruno Freschi's landmark building served as the welcome center for Expo '86, its abstracted snowglobe form embraced by Vancouverites justly proud of the city's snowy mountain views. The three-quarter geodesic dome echoes the Expo '67 US pavilion in Montreal—a collaboration between Cambridge Seven Associates and Buckminster Fuller—but with an exoskeleton communicating through symbolic use of colored lights. It remains an identity marker for the tourist-friendly city: Here we held the first international gamelan festival, here we brought Soviet and American space technology together peacefully, here we waited in line for thrill rides and stopped for lunch on the McBarge.

The theme of Expo '86, "The World in Motion, the World in Touch," marked three centennials: incorporation of the port city of Vancouver, completion of Canada's first transcontinental rail line (thanks in part to thousands of laborers from China), and arrival of the city proper's first imported goods—tea from China—though the region had been exporting logs, beaver pelts, and gold for years. A fire razed most of Vancouver's early structures in June 1886—a fourth centennial unheralded in 1986 but equally important to the city identity, for it established Vancouver's pattern of defining itself and then promptly reimagining its future. As a node connecting London and Montreal to the Far East, Vancouver's success was secure despite the destruction of its physical presence, and its population of 1,000 inhabitants shot upwards.

When it came time to auction off the 204-acre postindustrial waterfront property in 1988, city planners issued "False Creek Policy Broadsheets," setting clear expectations for development of the former Expo site—parameters that could be instructive



LEFT
Opposite the harbor baths, a linear playscape on the neighboring Kalvebod Brygge in Copenhagen. Photo: Jens Cederskjold, 2013

their children, creating the renegade neighborhood that became known as "Freetown Christiania."

What set these two cities on very different trajectories is the political framework within which they operate. For Copenhagen, this framework is defined by the historical fact that for more than 100 years no single political party has ever maintained an absolute majority in Parliament, resulting in a culture and working methodology that values coalitions. Meeting each other halfway is the endgame, compromise is the way forward. Key appointments are spread across parties. This has defined a political arena of passionate debate—parry and thrust—but ultimately a consensus around a middle ground. Contrast this with Boston, a political framework that begins and ends in the neighborhoods—a city where for 21 years during a critical time that defined much of our waterfront, the late mayor Thomas Menino almost single-handedly guided every significant decision, from the parcel configurations of the Seaport District to the shapes of the tops of the city's high-rises; a city that only recently has had its City Council representation accurately reflect the diversity of its population.

But it goes beyond politics. A city's personality is the result of a rich amalgam of geography, economy, politics, and social history. For Copenhagen, precariously situated among economically and militarily stronger neighbors, this has resulted in a collective psyche that is at once feisty, scrappy, inventive, and a bit impish. It is not at all coincidental that architects such as BIG and 3XN are rooted in Copenhagen, nor is it accidental that the experience of walking the waterfront will take you from the Royal Library to a floating hot tub in just a few short steps.

The point is not "Why can't we be Copenhagen?" Now that the dust from the planning and construction is settling, there is a strong consensus in Boston that the Seaport, the Rose Fitzgerald Kennedy Greenway, and the waterfront itself have

for the remaining development of Boston's Seaport. They include a 25-foot-wide continuous waterfront path separating bicyclists and pedestrians, residential densities targeting 50 to 80 units per acre (with 20 percent to be affordable), phasing of community facilities with population growth, and 45 to 50 acres of public open space (with two 10-acre parks) not including plazas, lobbies, or paths. The document prioritized views, sunlight, imageability, and integration with existing neighborhoods. District thermal energy was added later, as temperate Vancouver determined to reduce its climate impact.

Selling the entire site to Concord Pacific Developments for $320 million in 1988, planners strived to extend rather than divide the city. Collaborative weekly meetings between municipal staff and development team members, followed by public presentations, led to the release of the official False Creek development plan in 1990. This delineated neighborhoods, each with a specified location for an identity-defining public-realm element within grouped towers reaching up to 300 feet. The city bore the cost of addressing contaminated soils abandoned by industry, while the developer carried all infrastructure and amenities except the main boulevard.

Planners wanted clusters of towers with individual textures, rather than cookie-cutter repeats, to support community. First Nations people had inhabited communal longhouses, each home to roughly 100 people, in the region for thousands of years. (Suffering heavy losses during epidemics brought by Europeans, the last tribal settlement was pushed away from Vancouver in the 1910s.)

In 1989, city planners set 26 protected view corridors that were not to be obstructed by the proposed 47 new towers. This was achieved with a podium-tower approach—a minimum distance of 80 feet between high-rise elements, paired with a larger floor plate for the first three stories for a continuous, comfortably-scaled streetscape—that had already been tested elsewhere in the city. Often featuring balconies to add visual interest, and skinned with light blue or green glass, this form and its relationship with the outdoors (prioritizing daylight, views, and open space) came to be known as "Vancouverism," admired for its success in creating livable density.

It's not surprising that this striving young city has fostered original thinkers, including Douglas Coupland, the author of *Generation X*, a novel shaping a cohesive identity for North Americans born between 1960 and 1980. Coupland, an artist in a Vancouver family of athletes and riflemen, spent long stretches living abroad, honing his artist-as-anthropologist, identity-seeking compulsion. In 1992, as cranes started

not lived up to everyone's expectations—but all is not lost. Here is what Copenhagen can teach us:

Great cities are created through continual, engaged dialogue with broadly diverse participants. For Copenhagen, planning is a continual conversation, an iterative process with broad participation. For Boston, while the current 2030 masterplan process may ultimately bring about a more inclusive planning approach, the Seaport District in particular is evidence that the recent history of creating public space is transactional, hinging on negotiation between private developers and city officials.

Be both bold and incremental. Those in the trenches during the heyday of Copenhagen's transformation are proud to claim there was no overarching masterplan; rather, many of the big moves were the result of incremental testing and assessing. Copenhagen's transition to a more pedestrian and bicycle-centric core is a good example. Don't spend years developing a comprehensive transportation and parking masterplan. Instead, slowly (and covertly) remove 2 percent of the parking spaces from the core of the city each year. During the month of August, the traditional vacation time when the city core is sleepier, test new traffic patterns.

Think of the city as a laboratory. Don't overplan. Don't overanalyze. Toss out ideas, and see what works. When development was proposed for Paper Island, the historic center of Copenhagen's printing industry, there was a nagging sense that the proposals were lacking in character and inspiration. The city called "time-out" and for five years allowed start-ups and artists to homestead in the old warehouse buildings while they rethought the development strategy. The result was a vibrant, funky pop-up neighborhood in the core of the waterfront district.

Don't be so serious. Have a sense of humor. Embrace the seasons. A prominent element along Copenhagen's waterfront are public swimming areas with playful, inventive boardwalks that twist and wind, embracing the harbor and creating places for people to sunbathe and—for those who dare—leap from the highest elements into the harbor. BIG's Amager Bakke Waste-to-Energy Plant, nearing completion along the harbor, contains a ski slope on its roof, a climbing wall, and a 406-foot-tall chimney that puffs water vapor in the form of smoke rings to remind citizens of their carbon footprint. (Copenhagen is on schedule to be carbon neutral by 2025.)

Copenhagen is far from perfect. It continues to grapple with issues of traffic, parking, affordable housing, and the privatization of the public realm. But walking its waterfront one realizes that debates over these issues are inclusive, lively, optimistic, and accompanied with a wink and a giggle. ■

popping up around the former expo site, he reestablished a Vancouver residence.

Coupland's frequent travel forced him to absorb the city's rapid changes afresh with each homecoming. In his 2002 Vancouver guide *City of Glass*, he writes with a mixed tone about local acceptance of the "see-throughs." Even with a layer of cynicism, though, Coupland sensed that these towers symbolized "a New World breeziness and a gentle desire for social transparency—a rejection of class structures and hierarchy."

In the 16 years since Coupland's optimistic expression in *City of Glass*, residential unit values have escalated significantly. Although the development's unit count increased by 2,000 to a total of 11,500, the number of affordable units did not. The city allowed the affordable percentage to drop down to 11 percent but maintained the 20 percent affordable requirement for subsequent developments.

As of 2016, 6 percent of downtown Vancouver housing units were unoccupied; it is reasonable to guess that at least 10 percent of False Creek North apartments are owned by investors, since most established neighborhoods have low vacancy rates. In response, Vancouver adopted an Empty Homes Tax in November 2016, taxing owners of unoccupied units 1 percent of the assessed value.

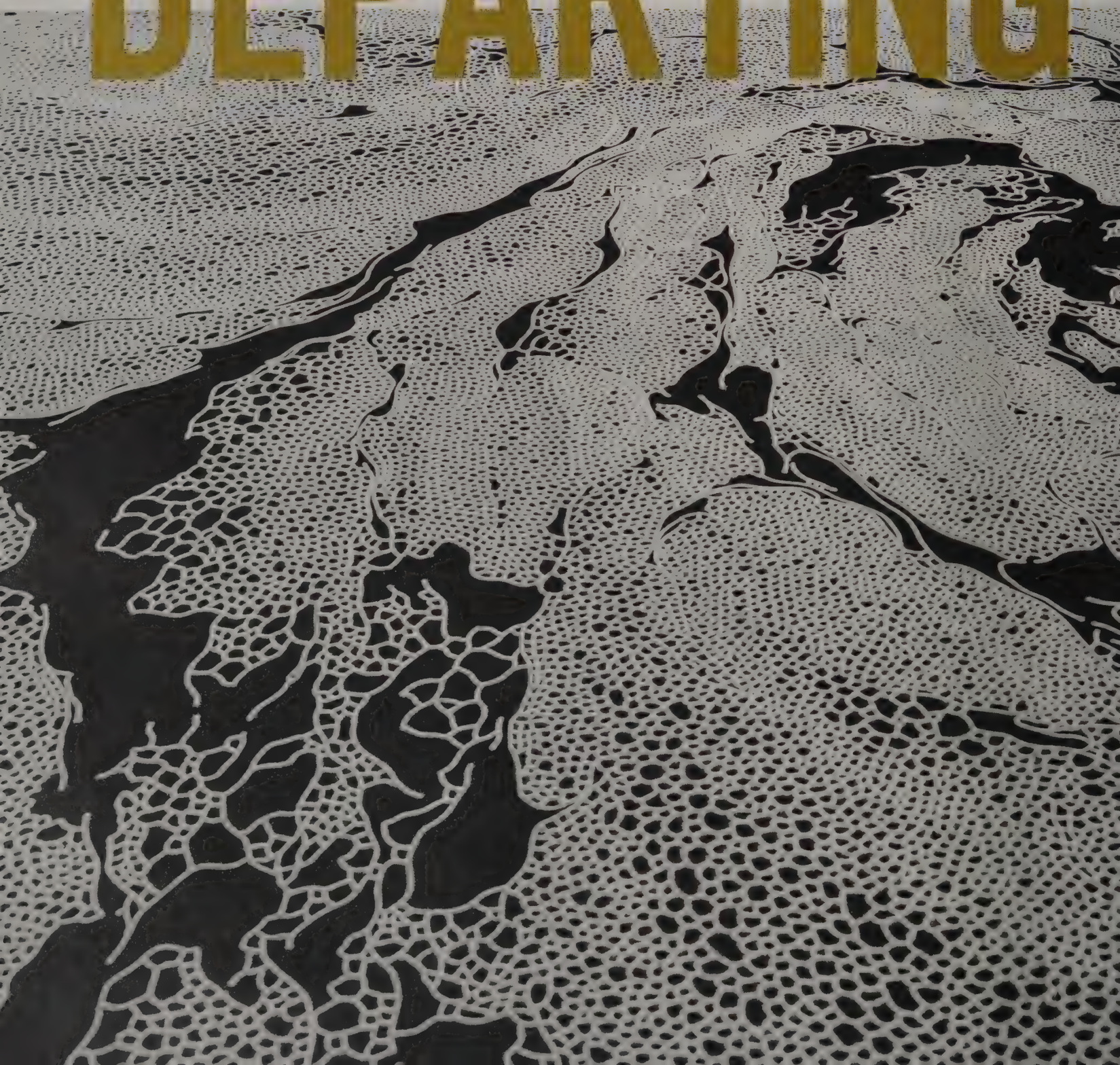
False Creek residents continue to shape their new identity. Borrowing a move from nearby Science World, they protested the delayed start of a long-promised park by displaying lit green bulbs at balconies and windows. And as part of a citywide reconciliation effort, Vancouver's staff and park designers are discussing park planning with aboriginal representatives. As Coupland observes in a recent collection of essays, "That's what makes Vancouver Vancouver—every ten years it becomes a totally different city." ■



LEFT
The Olympic Village at False Creek, Vancouver, British Columbia, built to house the 2010 Winter Olympians. Photo: Ka-Kei Law, 2009

ARRIVING / DEPARTING

NAVIGATING THE TURBULENT DIVIDE BETWEEN LAND AND SEA





by Dan Adams

When you follow behind a salt truck on the highway, watching crystals spiral out of a spreader, you are witnessing part of a vast material network facilitated by the Port of Boston. This salt might be from the Zechstein Sea, 250 million years old, which evaporated during the Permian era and is now mined 1,200 feet underground in Northern Ireland or Poland. Humble road salt helps tell the story of the seaport's profound role in translating the scale of global goods arriving by water and moving onto local roads.

Salt is delivered in 50,000-ton packages (ships) from across the sea, stockpiled and redistributed into 30-ton deliveries (trucks), and received in public works sheds or tucked under highway viaducts, ultimately to be spread across highways, runways, docks, parking lots, driveways, stoops, and patios throughout the region. The port facilitates this massive downscaling and dispersal of resources, a fantastical moment of global convergence.

Towns from Bedford, Massachusetts, to Bedford, New Hampshire, depend on this infrastructural flow of resources for goods delivery, just as Boston depends on distant landscape resources such as the Quabbin Reservoir (water) or the European Permian Basin (salt). In planning Boston's waterfront today, consideration of port operations is crucial—yet it is often an awkward fifth wheel in conversations about recreation, flooding, real estate, and ecology.

Access to the shoreline is difficult to reconcile with security perimeters around marine terminals. Kayaks (7 feet long) and Panamax vessels (700 feet long) are mismatched partners. Seawalls that block surges also block ship routes, and living shorelines conflict with deep-draft vessel mooring. Dredging and pile driving uproot shellfish and plant life. Luxe waterfront condos constrict truck routes and other noisy, messy processes inherent to dispersing goods into a city. These conflicts between city and port persist despite Boston's origins as a city birthed from trade across the sea. Designing the shoreline as a shared resource between city life and port

LEFT
Floating Garden, by Motoi Yamamoto, 2013, composed of salt. After each installation, the salt is returned to the sea. Courtesy © Motoi Yamamoto



LEFT
Mining Zechstein sea salt 1,200 feet below ground, in Northern Ireland. Photo: Dan Adams

operations remains the great challenge in considering the waterfront's future.

The distinction between the port and the city is important. The port is not Boston's. Even the traditionally recognized boundaries extend outside Boston into Chelsea, Everett, and Revere. The seaport is not a singular artifact; it is an assembly of thousands of infrastructural elements that bridge the turbulent divide between sea and land—berths, piers, wharves, bulkheads, bollards, and fenders were built discretely over hundreds of years but today form a continuous linear chain that wraps nearly the entire coastline.

Neither is the port an isolated artifact: numerous upland communities of the Charles, Mystic, and Chelsea River watersheds are hydrologically linked to the harbor, where sea-, road-, rail-, and airways converge to facilitate the movement of goods and people, collecting and dispersing resources like a two-way funnel. (Salt arrives in big ships and disperses in little vehicles into the city; little bits of metal-like cars, toasters, and chain-link fences condense at portside scrapyards into mountains of rusting steel and ship out in massive packages across the globe for recycling.)

Herein lies one of the most challenging aspects of waterfront design: It is local, regional, and global all at once, which can create conflicts among competing interests. Although Boston might benefit from converting a waterfront scrap-metal terminal into a recreation landscape or might generate more property taxes with new condominium development, how do such developments benefit all the communities between Williamstown or Provincetown? These towns depend on and benefit from port operations in Everett for collecting and shipping out their scrapyard steel.

The port's value crosses municipal boundaries. Its most critical infrastructure—the Federal Navigation Channel, a dredged deep-draft channel that runs underwater from the outermost Harbor Islands to the Route 99 bridge in Everett and the former Forbes Lithography plant in Chelsea—is federal. The dredging-based construction and maintenance, orchestrated by the US Army Corps, is paid for in large part through state and federal taxes, so the infrastructure is not the property of Boston. Landscapes that abut these channels are almost entirely former tidelands that were filled to create cargo laydown and stockpiling or trans-shipment areas within a crane's swing to deep water. In this way, these waterfront lands are inherently married to the construct of the channel, and because these lands were once water, the public has embedded rights of access and use through the state law known as Chapter 91.

These lands should be dedicated to advancing the public's common wealth. The constructed waterfront, because of these embedded public rights as well as historic state and federal investment, is not a simple land commodity but a national resource. This history of regional investment in the infrastructure and the landscape makes the definition of "public" complicated. The public that benefited from historic federal port investment and sacrificed commonwealth rights to filled tidelands is not just confined to Boston city boundaries, but is a public that is spread throughout the state and the region. Therefore, any redevelopment of this landscape should serve not only the interests of the city but also the broader commonwealth of the region.

The port houses critical infrastructures and industries that function like keystone species in an ecological web. Displacing one of these functions has a cascading effect on the performance of regional infrastructure. For example, if the closure of a marine terminal causes the rerouting of a single ship carrying 50,000 tons of cargo from Boston to Newark, then it takes more than 1,500 trucks to bring that same cargo from Newark to Boston. Effectively, one ship mile becomes 1,500 truck miles. Transport over water consumes significantly less fuel than trucks—a gallon of fuel can move goods nearly 10 times farther over water than over land, emitting less particulate matter and relieving roadway congestion. In Boston, when a marine terminal is replaced by a waterfront amenity or new development, local benefits might be seen, but the costs are quietly dispersed across a region.

The keystone species metaphor is also applicable to ports when considering a region's economic diversity. Ships and marine terminals are largely automated today, with minimal direct employment of crews or terminal operators. This can make it complicated to argue for the economic and cultural value that such operations embed into the urban environment. Wouldn't a park benefit more people? Wouldn't construction create more jobs?

Port operations trigger diverse indirect trades. When a ship docks in a city, there is a ripple effect through the local economy: Coast Guard officials certify, harbor pilots navigate, health inspectors inspect, customs agents process, labs test, tug crews tow, line-handlers moor, chandlers deliver, welders fix, barges refuel, new crew arrive at the airport, longshoremen unload,

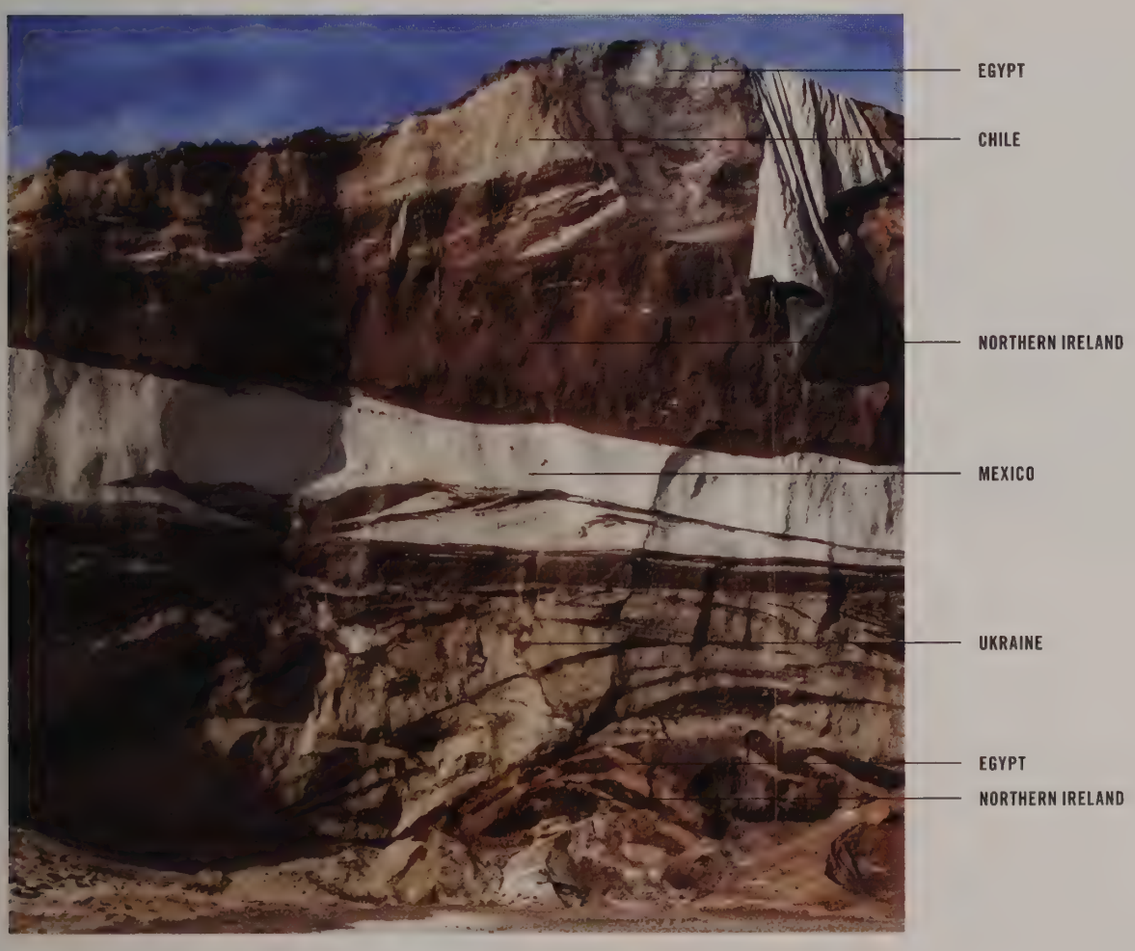
machine operators scoop and dump, truck drivers queue. When such operations are displaced from cities, the diverse economies, skills, and associated diverse cultures of people are eliminated. The city becomes more monocultural.

A cascading loss occurs when the critical mass of operations becomes so reduced as to no longer support others. If dry docks and their associated painting, welding, and machining shop operations collapse, then the ship fleet that depends on these services must find such support further afield, making them more prone to collapse themselves. The workings of the port are a delicate interdependent ecosystem.

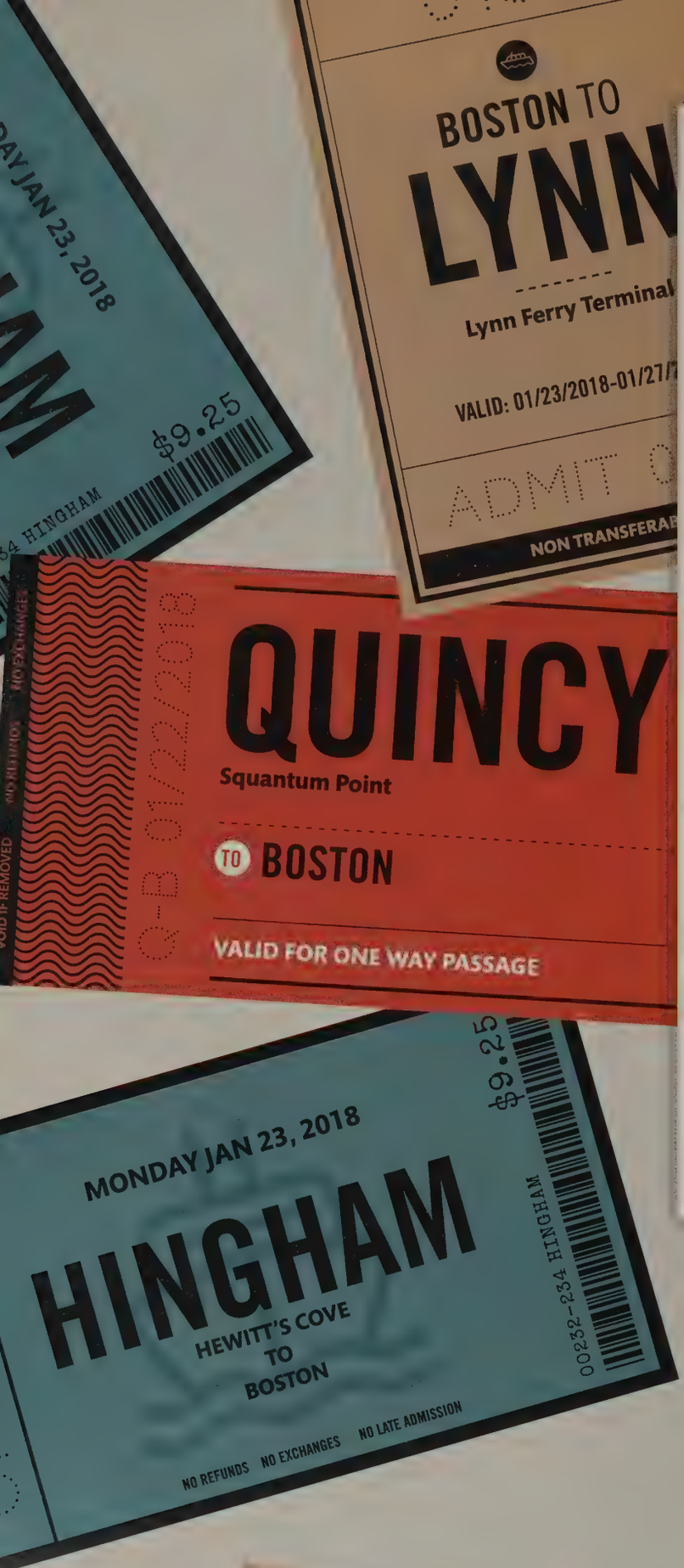
Today, it is common for cities such as Boston to be identified as postindustrial, a strange reality given that the city's dependence on industrial processes and industrially produced goods has only grown, while simultaneously the city has become less perceptually connected to its own industrial footprint. Instead of drawing from local communities, the city forges infrastructural relationships across the globe. The port is a rare landscape where these relationships are pronounced. Architectures such as liquid storage tanks; grain or gypsum silos; and stockpiles of bulk material such as salt, gravel, sand, cobbles, roll-on/roll-off yards for cars, or laydown yards for shipping containers, make the various materials and quantities that support the city apparent. Similarly, piles of scrap metal or municipal solid-waste depots make visible the collective byproduct of the region's day-to-day life. Such transparency is necessary if residents are to understand how their city works and make informed decisions about their actions: When I use something, where did it come from? Who made it? Was it fair and just?

The architecture of the built environment plays a pivotal role in either revealing or shrouding the systems and resources that sustain a place, and ports are central to this process. When ports are a part of everyday life, the material flows that sustain the city can be confronted, considered, and accounted for; when they are cast away, these systems are undetectable and incoherent: out of sight and out of mind. In this way, the designed relationship between a city and its material networks plays a significant role in either empowering or disempowering people to wisely participate in the systems that support the city.

Today, urban waterfronts are increasingly contested environments between demands for recreation, ecologic performance and habitat, coastal defense, real-estate value, and global infrastructural utility. None of these uses is incompatible; the compatibility of each is a matter of design. Density in cities is a positive trait, but too often it is measured through people per acre or square footage of architecture development. Positive urban density should account for what a city does: how much it stands on its own resource networks, is a resource for other communities, and accounts for its own footprint. ■



LEFT
Global salt stratigraphy in Chelsea, Massachusetts. Photo: Dan Adams



FERRY ME HOME

COMMUTING BY BOAT SPURS DEVELOPMENT IN OLDER PORT CITIES

by Alice Brown

Just 10 miles north of Boston, 80 acres of undeveloped, post-industrial property sit forlornly along the shore of Lynn. The only waterfront residential property in this diverse city is the 1985 condominium development at Seaport Landing. But change is coming, fueled by new zoning that allows for denser mixed-use development and by the alluring promise of regular ferry service at the Blossom Street Pier.

At the long-dormant former site of a Chevrolet dealership, a development called North Harbor is breaking ground this year on a 344-unit residential project and constructing a boardwalk that will link future residents to the ferry dock. According to the City's economic development agency, EDIC/Lynn, the investors in this $100 million project cited the commuter ferry as a major reason for their interest in the site. Elsewhere in Lynn, the promise of ferry service as a multimodal option for reaching downtown Boston, and possibly other destinations such as the Seaport or Dorchester's Columbia



Illustration by **KYLE NELSON**/ Stoltze Design

Point, has drawn developers attracted to this kind of amenity. The 35-minute trip by boat promises to be the most reliable and appealing way to get directly downtown—more consistent than driving on Route 1A—and with closer connections to jobs in the Financial District and the Seaport than the commuter rail.

"We are seeing new development projects take shape, and shovels are in the ground for mixed-use and residential properties with water views of the Boston skyline," says Lynn's newly elected mayor, Thomas M. McGee. "Property values have gone up, and projects that languished for years have now moved forward specifically because there is a commuter ferry option."

The new mayor has spent more than two decades representing his community in the State House and has been a champion of water transportation. Significant public investments and planning over the past decade have laid the groundwork for bringing permanent regular ferry service to Lynn. The Massachusetts Department of Transportation (MassDOT) and the state's Seaport Economic Council invested nearly $8 million between 2007 and 2011 to build a new ferry terminal, complete with ADA-accessible ramps, bulkheads, wave attenuators, and a new parking lot in order to support robust ferry service. Pilot service, for three months at a time, tested the ridership demand between Lynn and Boston in the summers of 2014 and 2015, with more than 15,000 passengers in the second year. Though suspended in 2016, ferry service returned for the summer of 2017, with funding from MassDOT as mitigation for roadway construction along 1A and around the Sumner Tunnel.

Although this momentum has attracted developers, guaranteed year-round service has not yet arrived to spark additional construction. Wanting the autonomy to implement schedules as it sees fit, Lynn received a $4.5 million federal grant to purchase its own ferry in 2016, and a business plan for permanent ferry service to Lynn, commissioned by MassDOT, was completed in February 2017. Now MassDOT and the MBTA are working with City Hall to procure a vessel, and with state support, the nonprofit Boston Harbor Now is working on a comprehensive water transportation study that is expected to lead to expanded ferry service in the region.

Whether ferry services catalyze development or waterfront development attracts ferry service is a question answered both ways.

At Hewitt's Cove in Hingham, the ferry came first. The Bethlehem Hingham Shipyard, a hive of waterfront industry during World War II, was largely abandoned in the 1950s and '60s. Ferry service began there in 1975 and gained traction with state assistance beginning in 1977. It has grown to become a year-round MBTA service, with 32 daily weekday departures—at a fare of $9.25 one way—and more than 1 million passenger trips annually. Meanwhile, a mixed-use development has been evolving around the ferry dock over the past decade. Hewitt's Landing, a 150-unit townhouse development, opened in 2007 and condominiums followed, along with several blocks of familiar name-brand stores. The ferry terminal building was rebuilt by the MBTA in 2016 for $7 million, and additional development is planned or under construction.

At Squantum Point in Quincy, by contrast, ferry service is now being demanded after 30 years of gradual development. The peninsula was a naval air station from 1923 to 1953, and the western half of the site has slowly been built out since the 1980s as the mixed-use Marina Bay neighborhood, with 6-to-12-story buildings clustered around a marina and boardwalk dotted with local shops and restaurants. The other half of the site served as a staging area for the construction of the Deer Island Water Treatment Plant. Materials and workers were ferried across Boston Harbor in the 1980s and '90s. The staging area is now a state park and a parking lot, and the pier built for the construction barges has temporary ramps and floats that have allowed ferry pilots to operate over the past two summer seasons.

1,482,251 NUMBER OF MBTA FERRY PASSENGER TRIPS IN 2016
Source: MBTA

But the 352-unit Meriel apartments that have just been constructed adjacent to the pier are the first to embrace commuting by ferry in their sales pitch, advertising "by boat" as an option for reaching downtown Boston. With a new access road planned and a federal grant application for pier improvements submitted, the City of Quincy is working to implement more regular and permanent ferry service that can support new and continued development.

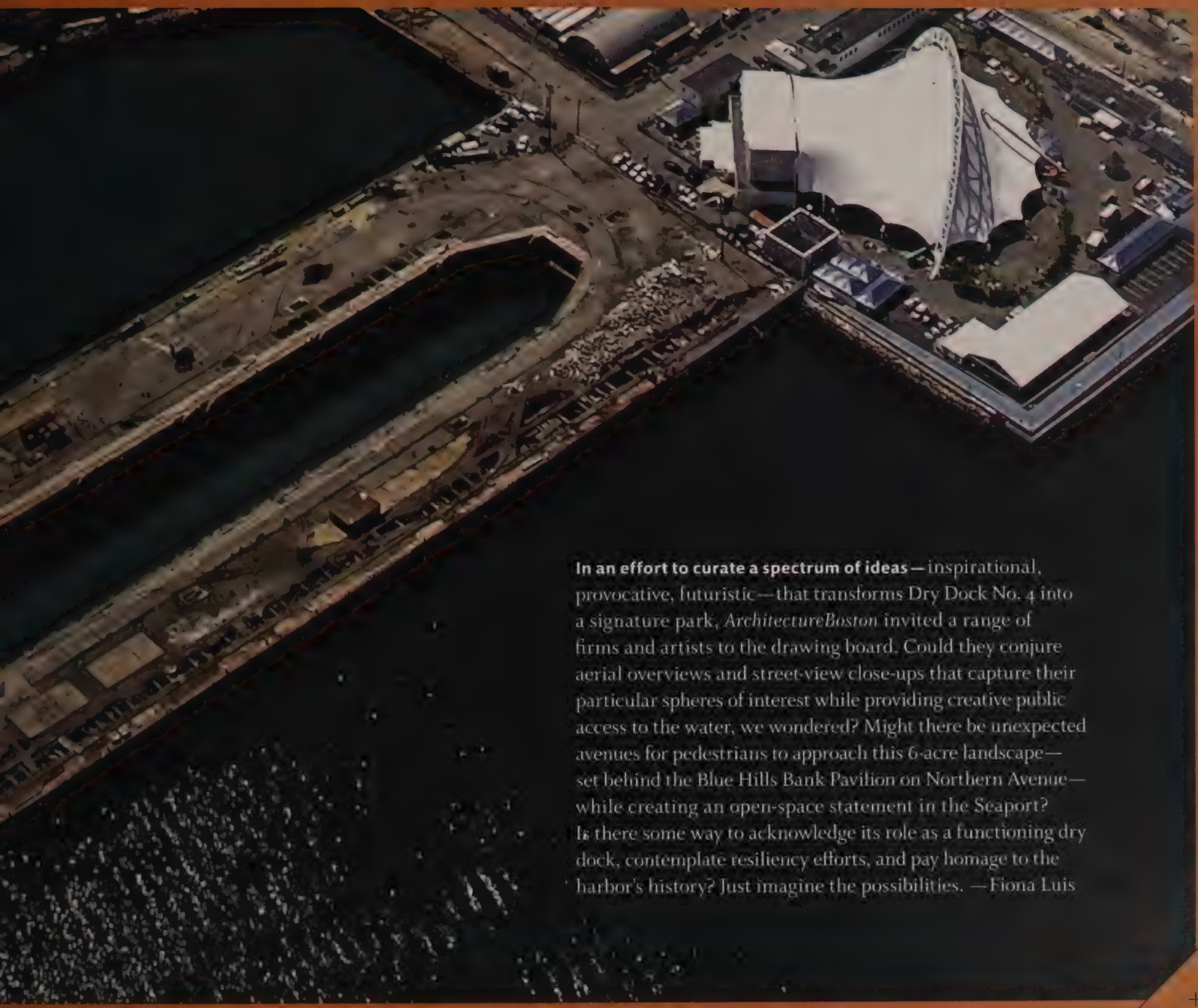
Ferries are not a silver bullet for attracting development and establishing a sense of place. Downtown Lynn was activated this summer by Beyond Walls—a public-art initiative that included the installation of 15 building-sized murals and more than 400 linear feet of dynamic LED lighting on underpasses below the commuter rail tracks. Even McGee notes that Lynn is benefiting from a thriving arts and cultural district as well as the attraction of relatively affordable housing options.

Still, there's something about daily commuting by boat that captures the imagination, and public investments in water transportation are attracting new development all around Boston Harbor. Beyond the romance of sea-borne travel and the benefits of new transportation choices, the busy docks and maintenance facilities signify a rebirth in the region's marine industrial cities. ■

NOW DOCKING



ENVISIONING NEW LIFE FOR A 700-FOOT-LONG PIER



In an effort to curate a spectrum of ideas—inspirational, provocative, futuristic—that transforms Dry Dock No. 4 into a signature park, *ArchitectureBoston* invited a range of firms and artists to the drawing board. Could they conjure aerial overviews and street-view close-ups that capture their particular spheres of interest while providing creative public access to the water, we wondered? Might there be unexpected avenues for pedestrians to approach this 6-acre landscape—set behind the Blue Hills Bank Pavilion on Northern Avenue—while creating an open-space statement in the Seaport? Is there some way to acknowledge its role as a functioning dry dock, contemplate resiliency efforts, and pay homage to the harbor's history? Just imagine the possibilities. —Fiona Luis

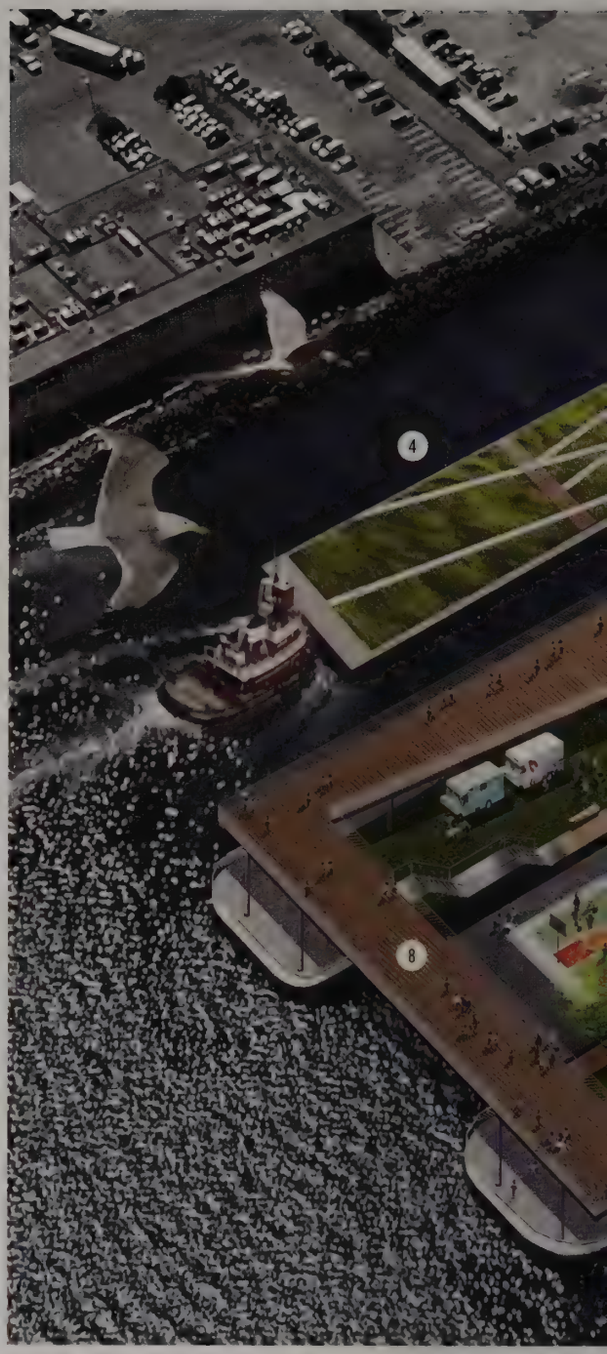
ABOVE
An aerial view of Dry Dock No. 4 photographed in May 2016 by Les Vants Aerial Photos.

PLUG and PLAY

by LEMON BROOKE
JENNIFER BROOKE AND CHRISTIAN LEMON ASLA

A rusty relic alongside the gleaming new South Boston Seaport developments, the decaying hulk of Dry Dock No. 4 is a visceral reminder of the early-20th-century industrial urban edge, where large ships would visit, conduct business, and then leave. PLUG and PLAY is a park proposal that addresses this dynamic and historic function of the site as well as the recent and glaring revelations that this city district is neither socially diverse nor insulated from the ravages of Mother Nature. At the heart of this park are floating landscape barges that are interchangeable as well as usable along other waterfront sites in the city—A Kit of Parts. The dock, which has been reimagined as an urban green and promenade, serves as a permanent anchor, a link to the shore.





1. FLOATING VENUES
The Basketball Barge hosts tournaments and friendly, competitive sporting events as long as the weather permits. With sneakers and a ball, anyone can play, and Bostonians come from all over the city to watch people become players.

2. CHANGE IT UP
Places of public gathering and recreation, the Barges can be floated to other parts of the city and docked where desired or needed. Their arrival and departure schedule is posted at the Dry Dock No. 4 website.

3. OCCUPY BOSTON
Occupiable in a multiplicity of ways, the park accommodates those attention seekers at the center, quite literally, as well as those who prefer views from the more anonymous periphery of the dock edge. The middle ground is most popular.

4. BARGE-IN-WAITING NO. 1
Other barges patiently but productively await their turn to plug in. The Salt Marsh Barge offers avian habitat, hands-on educational opportunities and, like a pool filter, is constantly working as it floats around the bay.

5. SEASIDE STAGE
The promenade supports light retail with kiosks and a café, making it a place for both actors and an audience. The real show is on the barge below. Lean against the rail, and watch a different barge carefully pull in and slowly populate with denizens of the city.

6. DOCK OF THE BAY
The dock is sturdy, industrial, and bulky. The public promenade hovers above it and offers an entirely pedestrian experience, free from the imposition of scale and materials, yet born of it. Stunning views of the bay are here.

7. PUBLIC SERVICE
A public space for the modern city, Dry Dock No. 4 is a park with a schedule and a social media page. It reinvents the neighborhood every time a different barge docks and injects new ingredients into the soon-to-be extraordinary soup that is the Seaport.



8. BRIDGE VIEW
The bridge, a pedestrian connection across the dock, is an excellent place to be when one barge is pulling out and another is pulling in. High above the floating landscapes, the views in all directions are outstanding and free.

9. ALL DECKED OUT
Long ramps make the promenade accessible for all and are ideal places for viewing the diversity of humanity visiting the park. The marvels of the city can be experienced, too, as though one were on the deck of a ship pulling into port.

10. BARGE-IN-WAITING NO. 2
Periphery Park Barge floats here, waiting in the wings, an entirely engineered landscape, complete with familiar rolling hills, park benches, big trees, and lawn that is mowed courtesy of a herd of sheep that is let loose every few weeks.

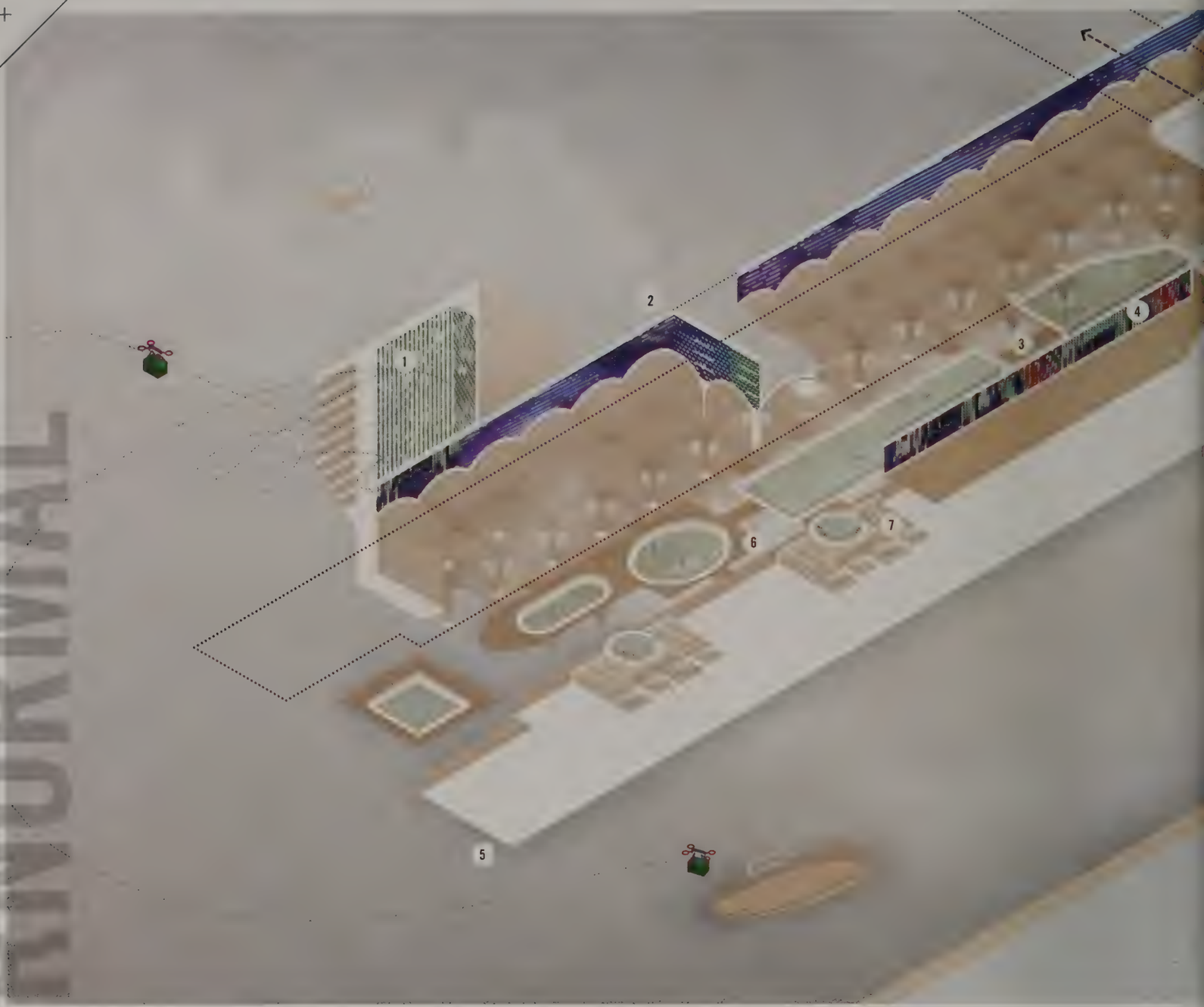
11. PARK AND PLAY
Under the boardwalk, out of the sun, the park has plenty of permanent shady and dry places for parking cars and trucks during the annual Dry Dock No. 4 Flea Market, just one of many citywide programs scheduled here.

1. AGRICULTURE
Resource-efficient food production couples aquaculture and LED-lit hydroponic plant cultivation. One million cubic feet of agriculture will produce more than 2 million pounds of lettuce per year.

2. FISH PROCESSING
Like the Ford assembly line that preceded it, the low-slung fish hall has sloped floors with typical heights of 4 feet clear to create an efficient line of pollack processing. Cod is extinct.

3. THERMAL EXCHANGE
Excess heat generated by server farm warms habitable spaces in the building in winter and the public baths year round. Cool harbor waters serve as a heat sink in summer.

4. INFORMATION
A server farm resides in the cofferdam in a mediated exchange with cool harbor water, delivering low-latency maritime information processing to the city and offering up excess heat for public good. In the coolest months, 800,000 servers heat baths.



SUPERNATURAL

5. ACCESS
Humans visit the site via water. Ferry station becomes part of the Harbor Islands and MBTA routes year-round. The abutting interior land is optimized for autonomous vehicle loading and egress toward distribution into the landscape. The edges are for humans, and the interior is for machines. The HarborWalk cuts a path bounded by both uses.

6. PUBLIC BATHS
The carefully controlled heat generated by mechanized marine industrial uses that support Boston create a four-season public space for humans. More than 1 million gallons of water are heated for human use.

7. PROGRAM
The automation economy continues apace to support production and human curiosity. The dry dock, which maintains a primarily industrial use, is housed in a building above public baths. Fish is transported from boat to building via drone.

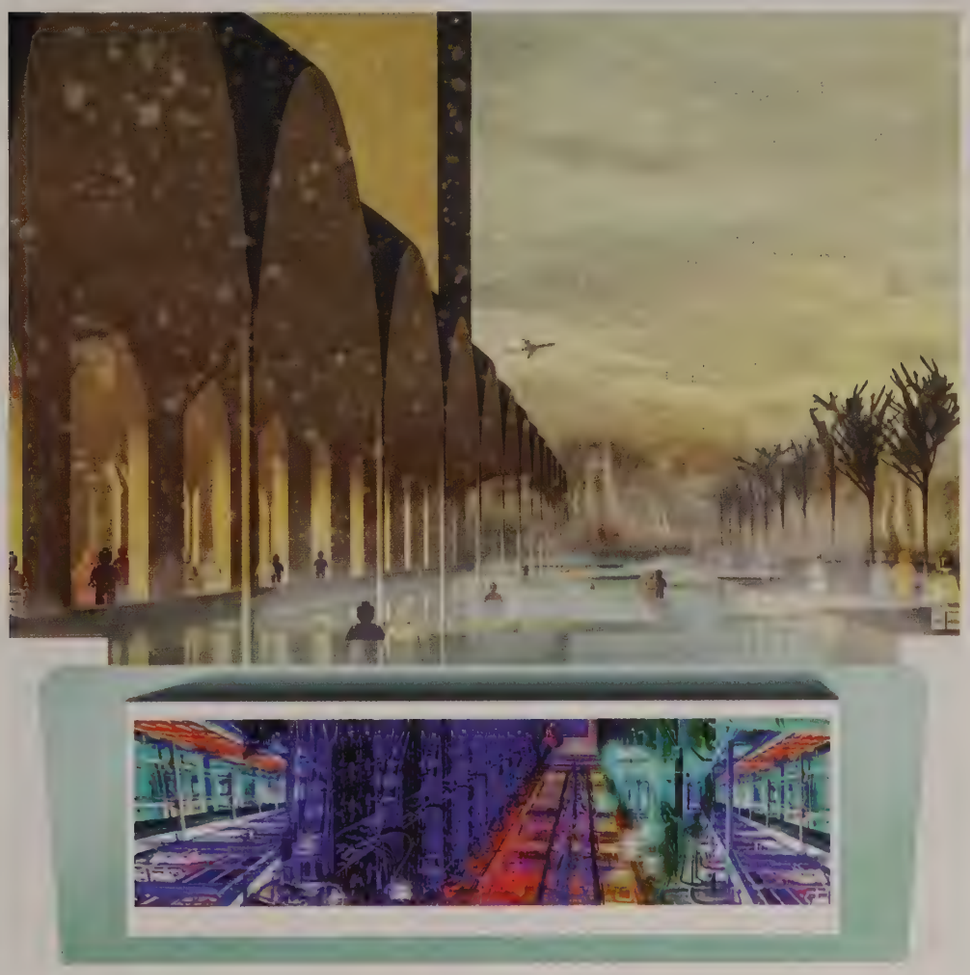
8. THE UPSIDE DOWN
Seen from below, the "fish-eye" illustrated view best shows the primary role of human occupation, supported and sandwiched by machine uses to insulate human leisure through four seasons.

THE MARINE INDUSTRIAL CLOUD

by SUPERNORMAL
ELIZABETH CHRISTOFORETTI, WILL COHEN, NATHAN FASH AIA, AND LAUREN MATRKA

In 2068, machine efficiency has made human labor unnecessary in the Marine Industrial Park. Society has shifted to a universal basic income to equitably and unconditionally distribute unneeded salaries, and Bostonians now pursue human interests in social settings that coexist in parallel with the machine labor that enables them. Given its proximity to the water and the continuing need to use ocean resources, the Marine Industrial Park maintains maritime industrial use as a primary function. While zoning remains unchanged, the efficiency of robotic labor liberates ground levels with the vistas that Bostonians appreciate, both for public leisure and the pursuit of a new form of human work. Dry Dock No. 4 is typical of the building and development types produced by this new economic condition. The stripped-down needs of machine production fundamentally reshape the constraints of building and site design to enable new types of social and civic space.





CHAPTER 91 AND THE DPA
The commonwealth is tasked with protecting both the public's interest in its waterways and existing water-dependent industries. This project maintains the working character of the designated port area and promotes public use exclusively along the water's edge.

MASSING
Bounded by Logan flight-path height constraints above, using the naval cofferdam structure below, and serving the needs of both public leisure and industrial efficiency, the site is part human and part machine.

TYPE
A synthetic building and site form emerges within the massing constraints. Tightly controlled marine industrial insulation enables an extroverted and socially optimized public realm: a civic industrial type.

AQUADOCK

by CAROLINA ARAGÓN ASLA

This proposal imagines the Dry Dock No. 4 as a park inspired by the permeable, productive, and rich marshland of the original Boston shore. The design conceptually and physically blurs the boundary between dock and ocean, allowing water in and expanding its adjacent water surface. The ideas set forth speculate how to engage the ocean in ways that harness its potential for energy and food production while creating a unique public space environment. The design imagines retrofitting the existing central basin to create a series of tidal reservoirs for energy production and public recreation. Ocean vertical farming along the edge of the dry dock is an opportunity to create sustainable food production and engage the public with "floating art" from illuminated colored buoys. Eelgrass-inspired lighting serves as a reminder of the natural shoreline.





1. "FLOATING ART"
Temporary art installations using colored illuminated buoys installed within the existing aquaculture infrastructure make the park visible from adjacent shore locations and airplanes during takeoff and landing.

2. OCEAN AQUACULTURE
Sustainable ocean farming for seaweed and shellfish along vertical columns suspended from buoys. This system requires no fertilizers, freshwater, or antibiotics; it sequesters nitrogen runoff and helps reestablish reef ecosystems.

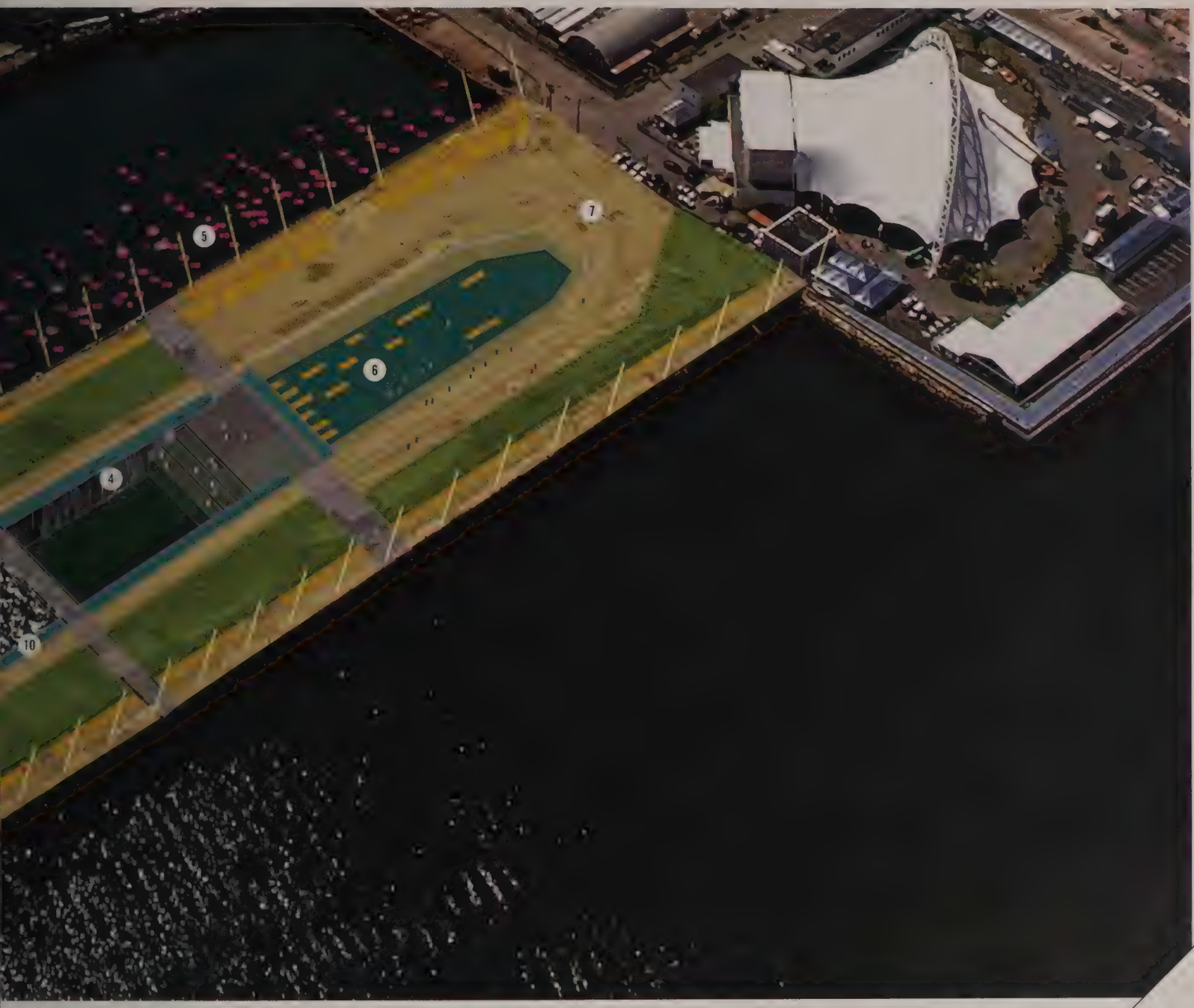
3. EELGRASS LIGHTING
Iconic lighting inspired by the local eelgrass, a marine seagrass commonly found in estuarine settings.

4. WATER WALLS
The reservoir will spill into a second pool along three water walls. The water drop will provide additional hydroelectric power. Terraces for public uses will be located within the space to provide access to this giant water room.

5. FOOD PAVILIONS
Space for local food vendors to sell locally harvested shellfish.

6. OCEAN SWIMMING POOL
A tidal swimming pool will create opportunities for summertime recreation. During the winter, it will be transformed into a skating rink.

7. AMPHITHEATER/BEACH
Large area for sunbathing, airplane watching, and enjoying the park.



8. TIDAL BARRAGE
Ocean water will flow through a barrage, or dam wall, containing turbine generators and fill a tidal reservoir.

9. TIDAL RESERVOIR
The tidal reservoir will fill according to the tides, providing a deep pool for multiple uses.

10. WATER CANALS
Small canals transport ocean water during high tide to the ocean swimming pool.



1. FERRY LANDING
A ferry landing connects this site to the existing Boston Harbor Cruises network, allowing for commuter and tourist ferries and water taxis.

2. COMMUNITY CENTER
A building with changing rooms, concessions, after-school activities, summer camp, ferry ticketing, and open rooms. The building has a green roof with an observation deck, allowing for a unique vantage of the harbor.

3. DRY-DOCK PROMENADE
Tree-lined plazas and walkways provide opportunities for picnics, barbecues, fishing, and people watching along the HarborWalk.

4. HARBORSIDE PLAYGROUND
Located at the entrance to the promenade, the harbor-themed playground provides a destination for families and opportunities for interactions between visitors to the pier.



5. DRUMLIN POINT
The terminus of the green band has terraced seating, providing views back to the city. A splash pad tucked in to the hills connects the pool area to the hills.

6. FISHING PIERS - FLOATING DOCKS
Floating docks provide an opportunity for fishing and public landing for small watercraft. Owners of small crafts can make the park a day-trip destination.

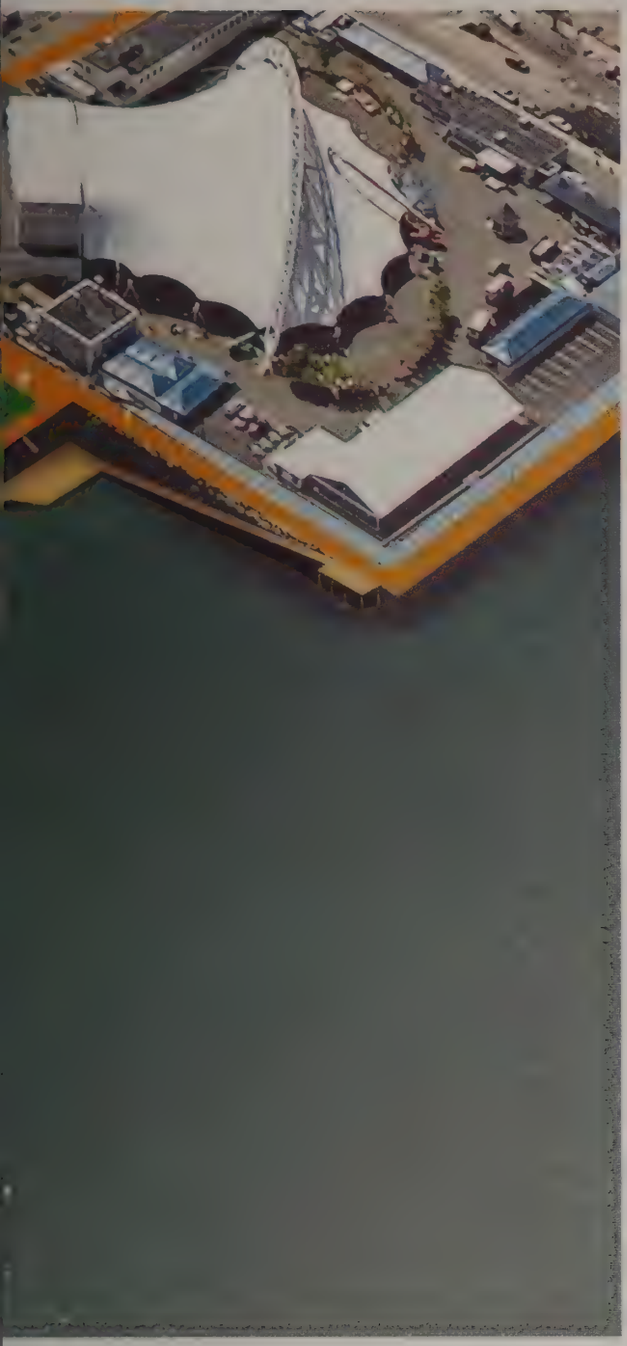
7. CONSTRUCTED DRUMLINS
Coastal vegetation covers hills echoing the glacial forms of the Harbor Islands. Nestled in the landform are opportunities for recreation, habitat, and views. Paths cut through the drumlins, and retaining walls expose the artificiality of the landform.

8. AMPHITHEATER
Nestled into the nose of the basin, the amphitheater provides a public counterpoint to the Blue Hills Bank Pavilion next door, offering access to the coastal wildlife of the blue band and allowing visitors to experience the depth of the dry-dock basin.

GRAY—BLUE—GREEN

by MICHELLE CROWLEY LANDSCAPE ARCHITECTURE
MICHELLE CROWLEY ASLA, NAOMI COTTRELL ASLA, JESSICA BROWN ASLA, THACKSTON CRANDALL ASLA, ERIN MCCABE ASLA, AND BROOKE WARFEL

GRAY—BLUE—GREEN is a public park that contrasts microcosms of urban, coastal, and pastoral landscapes. The basin and piers of the existing dry dock organize the landscapes into bands, and each plays with visitors' relationships to the horizon and waterline. The gray band is at city level and connects to the neighborhood's sidewalks and streets; a community center at the far end has a green roof from which you can see the harbor and islands. The blue band uses the depth of the former dry dock to lower visitors below sea level and immerse them in the space. The green band uses fill to create constructed drumlins that provide elevated prospects over the site, the harbor, and back to the city. Interspersed throughout each band are opportunities for active and passive recreation in unique settings, creating new life on the harbor.





9. CLIMBING WALLS - BOARDWALKS
The climbing walls and boardwalks within the basin allow for a close-up experience of the structure of the dock and the unique ecosystem occupying it.

10. BASIN SALT MARSH
A salt marsh constructed inside the basin just above low tide is a familiar habitat in an uncanny location. A lock system controls the flow of water while keeping the whole system lower than a naturally occurring marsh.

11. AQUARIUM SWIMMING POOL
On the harbor's edge, the natural pool sits among the ships of an active harbor. Clear sides allow parkgoers to watch swimmers and swimmers to watch the ocean life. In winter, the floor rises, creating a skating rink.

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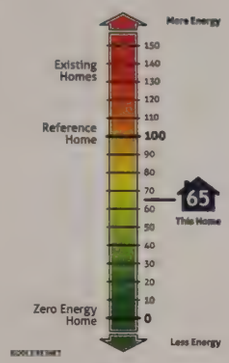
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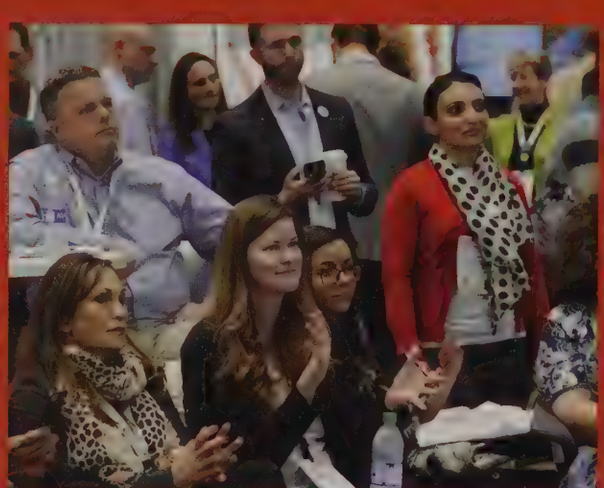


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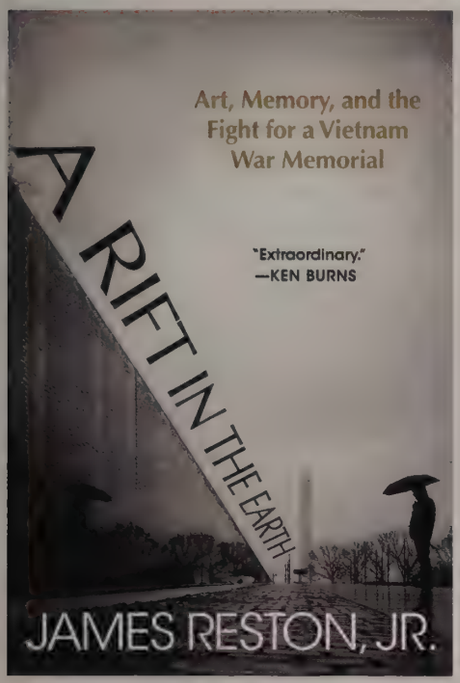
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BOOKS



A Rift in the Earth: Art, Memory, and the Fight for a Vietnam War Memorial
James Reston, Jr.
Arcade Publishing, 2017
Reviewed by Robert Campbell FAIA

Show architects an undoubted masterpiece and they want to know one thing above all: What was the design process? Step by step, how did the concept make its way from early doodle to built reality?

This new book on the Vietnam Veterans Memorial in Washington, DC, is readable and often fascinating. But it's not, alas, about design process. It's mostly the story of the nationwide political controversy that erupted when, in May 1981, the proposed design was announced to the public.

A 21-year-old Yale senior, Maya Ying Lin, won the job over 1,470 other entrants in a national competition. Her design appeared to be little more than a black granite wall dug into the lawnscape of the National Mall. A lot of Americans felt it didn't speak to them. It was artsy, it was abstract, it was not heroic. The conflict was eventually resolved by a compromise that added three modest military statues.

That's a story of cultural politics, and James Reston, Jr. tells it in rich detail. But the Memorial is also the story of the creation of a miracle of art. That's the more important story, and he skimps on it.

Andy Burr was then, and still is today, an architect in Williamstown, Massachusetts. In 1980 he was teaching a design studio at Yale on "Funerary Architecture," in which students would be asked to create designs for such subjects as a World War III memorial. Nine signed up, including Lin. They were already at work when the announcement came of the Vietnam Memorial design competition. Burr shifted focus. Now each student would create a potential entry to this real-world event.

Reston covers Lin's work in the studio in only a sketchy way, teasing the reader with unanswered questions. What were Lin's ideas when, in an early stage, she proposed a row of collapsing dominoes? What did she discuss with Vincent Scully, Yale's legendary scholar and writer, when she sought his advice in writing the "statement of purpose" that the competition required? Why was Lin's the only design from the Burr studio that was entered in the competition? (Well, Burr sent one in, too. It didn't place.) How did she arrive at the concept (brilliant in my view) of placing the names where the first to die and the last would meet at the spine of the Wall? Reston touches all these issues but doesn't delve.

Lin herself is partly to blame for the paucity of information. Reston says, not citing a source, that she was "an indifferent, prickly and difficult student" who "neglected to finish assignments." She partly ignored a requirement to record her ideas in a sketchbook as they evolved. At semester's end, before the competition results were known, Burr gave her a grade of "Incomplete." Reston says she stormed into his office demanding an upgrade. He relented to the extent of a B plus.

Lin's entry consisted of nine amateurish drawings and one written text (the "statement of purpose"), all arranged randomly on two presentation boards. I've been told by others that the jurors assumed this entry was the work of someone with no visual training, probably a veteran.

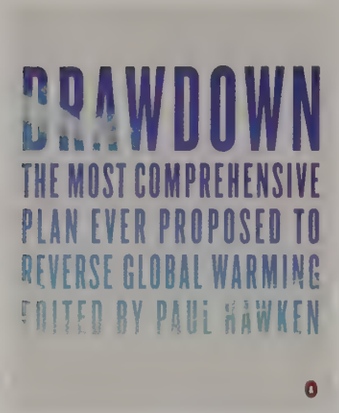
Architecture is always a collaboration. It doesn't diminish Lin's authorship to note some other sources of her design. Two of the competition rules, for instance, are key. First, the winning design must include, somewhere or other, all 58,000 names of those Americans who fell in Vietnam. Second, the "statement of purpose" must be lettered by hand, not by machine, the hand in question presumably being that of the designer and no one else.

Whoever dreamed up those two extraordinary rules deserves some of the credit for the great design. Lin took full advantage. The names are inscribed on a polished black granite wall that opens at its spine like a book. The names are words, of course, and they make the panels feel like pages from a chronicle long buried in the earth.

As for the statement of purpose, she knocks it out of the park. Lettered by hand on a sheet of paper that's pasted like a kitchen memo on one of the boards, it must have struck the jurors as homespun truth.

Reston accurately states that "it was her writing that won the competition for her." But again, he teases us with too little information. Except for a quoted sentence or two, Reston never spells out what the statement said.

ROBERT CAMPBELL FAIA is an architecture critic who has received a Pulitzer Prize and a BSA Award of Honor.



Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming
Edited by Paul Hawken
Penguin Books, 2017
Reviewed by Jim Stanislaski AIA

A few years ago, I was at a lecture in Boston to hear Paul Hawken: entrepreneur, environmental activist, and one-half of his namesake garden-supply company. He said something I will never forget: "Hope is the pretty mask of fear," alleging that to have hope, you must first fear something. To be honest, it left me a bit confused, wrestling with how these emotions inform our opinions and actions.

It was with this baggage that I read *Drawdown*, a term that refers to the inflection point at which greenhouse gases peak and start a consistent decline. Edited by Hawken, the book is a compendium of 100 strategies to reduce greenhouse-gas emissions in digestible two-page spreads—enough to get the gist without feeling like you are reading a technical white paper. The second part of the title, *The Most Comprehensive Plan Ever Proposed to Reverse Global Warming*, takes liberties; although the book is a well-researched inventory and projection, it is not a plan. *Drawdown* contains no milestone goals, regulatory models, or success metrics that would constitute a plan. These, after all, are monumental tasks for world leaders, organizations, nations, and communities.

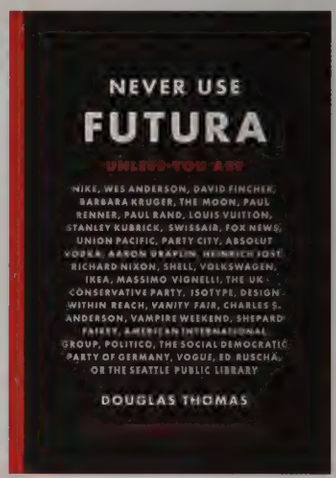
Instead, the book is better described as an executive summary for the larger "Project Drawdown" coalition consisting of 70 research fellows from 22 countries and a 120-person multidisciplinary advisory board. Anyone doing secondary research can create a synthesis of potential strategies; what makes this effort unique is the modeling. For each solution, the gigatons of carbon dioxide equivalent, net cost, and net savings are modeled and put through a three-stage review. This results in a ranking of effective strategies, further classified into "Plausible, Drawdown, and Optimum" scenarios. The relative impacts are eye-opening and credible, considering all the solutions are already invented, but just require implementation at scale. The user-friendly companion website (www.drawdown.org) gives us all the research data and detail that wouldn't fit in print.

This is an important book with accessible research, simple graphics, and a refreshing lack of technical jargon. Without a storyline that connects the strategies, it is not a book that most will read cover to cover, but its concise format and beautiful pictures make it a great coffee table book, easy to pick up when you have 20 minutes. There are many ways to read it: Meanderers' thumbs will land on interesting strategies outside their circles of knowledge. Those looking for headlines may skip to the rankings and return to read just the top 10.

Many of the strategies are technology based, such as Concentrated Solar (#25). Fewer are lifestyle based, such as Plant-Rich Diet (#4), which are personal choices in the way we live every day. Issues around women and girls are weighty enough to occupy their own chapter: Educating Girls (#6), Family Planning (#7), and Women Small Holders (#62). I was surprised to see Net Zero Buildings (#79) and Building Retrofitting (#80) limping in at the bottom, but there are footnotes citing forecasting challenges. My favorite part of *Drawdown* is "Coming Attractions," which includes solutions such as the Hyperloop, Repopulating the Mammoth Steppe, Marine Permaculture, and A Cow Walks onto a Beach.

Fear and hope are complex human emotions. Fear can be paralyzing or motivating, while hope can be hollow or fortifying. Around the world, there are thousands of smart people working on every strategy listed in *Drawdown*. Maybe you are one of them. For this, I am hopeful.

JIM STANISLASKI AIA is an architect at Gensler and president of AIA Massachusetts.



Never Use Futura
Douglas Thomas
Princeton Architectural Press, 2017
Reviewed by James McCown

Like Modern architecture, Modernist type has many passionate followers. This is no more so than with Futura, the boldly geometric sans serif font that emerged from the Bauhaus only to become the ubiquitous choice for everything from American corporate logos to bumper stickers for conservative political candidates to a plaque on the moon. In the same way that Walter Gropius and Le Corbusier were creating heroic architecture, Futura is a heroic type, completely broken from the past. This engaging new book by Douglas Thomas, a graphic designer and historian, is a biography of the typeface that explores what its wide usage means and why it is so popular.

Designed in the heady 1920s by the German graphic artist Paul Renner, the first Futura was a play on basic geometry. "Renner was attempting to create a new typeface to fit the age," writes Thomas. "The allure was clear: simple shapes could be produced mechanically and bore little visceral reference to preindustrial,

human-centric modes of production (handwriting, calligraphy), which undergirded centuries of conventional typography."

A feast for type geeks, *Never Use Futura* is at its best in the first half, which could be called a brief history of German typography. We learn that Renner's first drafts were positively radical, forming lowercase *g* with a circle and a triangle; a lowercase *a* with a circle and a right angle; and so on. Subsequent iterations were given more conventional shapes. Thomas positions Futura as a polar opposite of the ancient Fraktur fonts so associated with between-the-wars Germany and which many in the Nazi party considered "true Aryan" type.

But those who think Futura was put in service only as a revolutionary force for good will be disappointed. During World War II, it was used for purposes as sinister as identification cards for Jews being sent off to concentration camps; here in America, it was chosen for posters to round up citizens of Japanese descent and corral them into "relocation" camps in the country's heartland.

Thomas, who also designed the book, offers highly detailed artwork that, among other things, puts in graphic form the wide differences among the many iterations of Futura that have developed over the decades. He details the breathtaking ubiquity of the font in modern corporate America, especially within the fashion and retail industries. But, having steeped the book in typographical esoterica, oddly Thomas has not gone far enough. I would have preferred more discussion of the nitty-gritty of type design, from the movable metal type of the early-20th century to the digital graphic designer's concern about anti-aliasing, a process for smoothing pixelated typefaces, and other graphic interface issues.

The book's title is, of course, puckish and provocative. Toward the end, Thomas encourages Futura use, but only if mindful of its historic background. "This book was born out of my own experience grappling with Futura's ongoing popularity and trying to answer the question of when it is appropriate to use," he writes. "Framing the past through this single typeface opens up an alternative history of graphic design and culture."

This breezy read will result in the fact that no trip to the grocery store will ever be the same again. As you reach for the cereal box, you'll ask yourself, "Hmm... is that Helvetica or Futura? Whatever, it looks like they kerned it a bit..."

We are all, it seems, typographers now.

JAMES MCCOWN is a writer and marketing consultant who lives in Newton, Massachusetts.



TIME'S SENTRY

by Terri Evans

The Custom House was under threat. Preservationists in Boston were appalled. Yet a decision made in 1910 gave the city a defining landmark that is synonymous with the harbor.

Unencumbered by local building-height restrictions, the federal government had commissioned a 26-story tower atop the existing Greek Revival structure, giving Boston its first skyscraper. The tower burst through the city's 125-foot limit by a factor of four. In the economic stagnation that gripped the city over the following decades, the building remained the city's tallest until the Prudential Center was built a half-century later.

The rise, decline, and restoration of Boston's Custom House is inextricably tied to the changing character of the waterfront, though today the harbor itself has retreated from the building by close to a quarter mile.

Designed by Ammi Burnham Young, the 1847 Custom House was conceived at a time when maritime trade was at its height. Located on the water's edge between Long Wharf and Central Wharf, it presided over the country's busiest port. Stripped of ornamental detail and capped by a Roman dome, the granite cruciform structure with its columned porticos was a temple of commerce. Visitors today pass by the marble plaque unveiled by President James K. Polk at its dedication. Step into the rotunda and look up 95 feet at the original dome, no longer skylit but now bearing the Great Seal of the United States.

The land beneath the Custom House was born of the harbor, bought and filled by the US government. But the age of sail soon gave way to the steamship, and much commerce was lost to the port of New York. Wharf owners looked at their empty docks and began to see development potential.

When the State Street block was completed in 1857 on filled land to its east, the Custom House lost its place on the water. A decade later, in an effort to revive the port, the city inserted Atlantic Avenue, further isolating the Custom House from the harbor (and foreshadowing the intrusion of the elevated Central Artery).

By the early-20th century, the US Customs Service had outgrown its building, with no way to grow but up. The government commissioned the controversial new tower from Peabody & Stearns. The square form looked over the buildings around it as an Italian campanile over a medieval city, with stone eagles flanking its four-faced clock. In recent years, peregrine falcons nesting in the tower's high reaches have joined the eagles in their aerie.

Shortly after the tower's completion, the fishing fleet relocated to South Boston, devastating the old central waterfront. Following World War II, the view from the 496-foot tower was of a city in decline. The Central Artery swept away many of the vacant warehouses, obsolete in terms of contemporary shipping demands.

In 1973, the Landmarks Commission won inclusion of the Custom House District in the National Register of Historic Places, celebrating Boston's place as the country's leading 19th-century port. The district embraced the brick and granite warehouses that flanked the Custom House, from Bulfinch's Broad Street warehouses to the midcentury buildings of Central Wharf.

The US Customs Service left for the Thomas P. O'Neill Federal Building in 1986, and the Custom House was declared surplus property. City Hall attempted to redevelop the property after buying it in 1987, but developers did not consider it worth the renovation costs. It sat empty for 14 years, until Marriott Ownership Resorts International—reassured by plans for the Rose Fitzgerald Kennedy Greenway and the success of Quincy Market—recast the Custom House Tower as a hotel and time-share.

In South Boston's port facilities today, cruise ships outnumber cargo ships. Tourists have replaced tax collectors in the Custom House. Peabody & Stearns' once-feared tower thrives, a distinctive landmark for those arriving by sea or air. Its observation deck offers views of the old waterfront, now reborn, and the transformed Seaport District. ■



LEFT
A view of the waterfront and Custom House from near the mouth of Fort Point Channel, c. 1919.
Courtesy: Leslie Jones Collection, Boston Public Library

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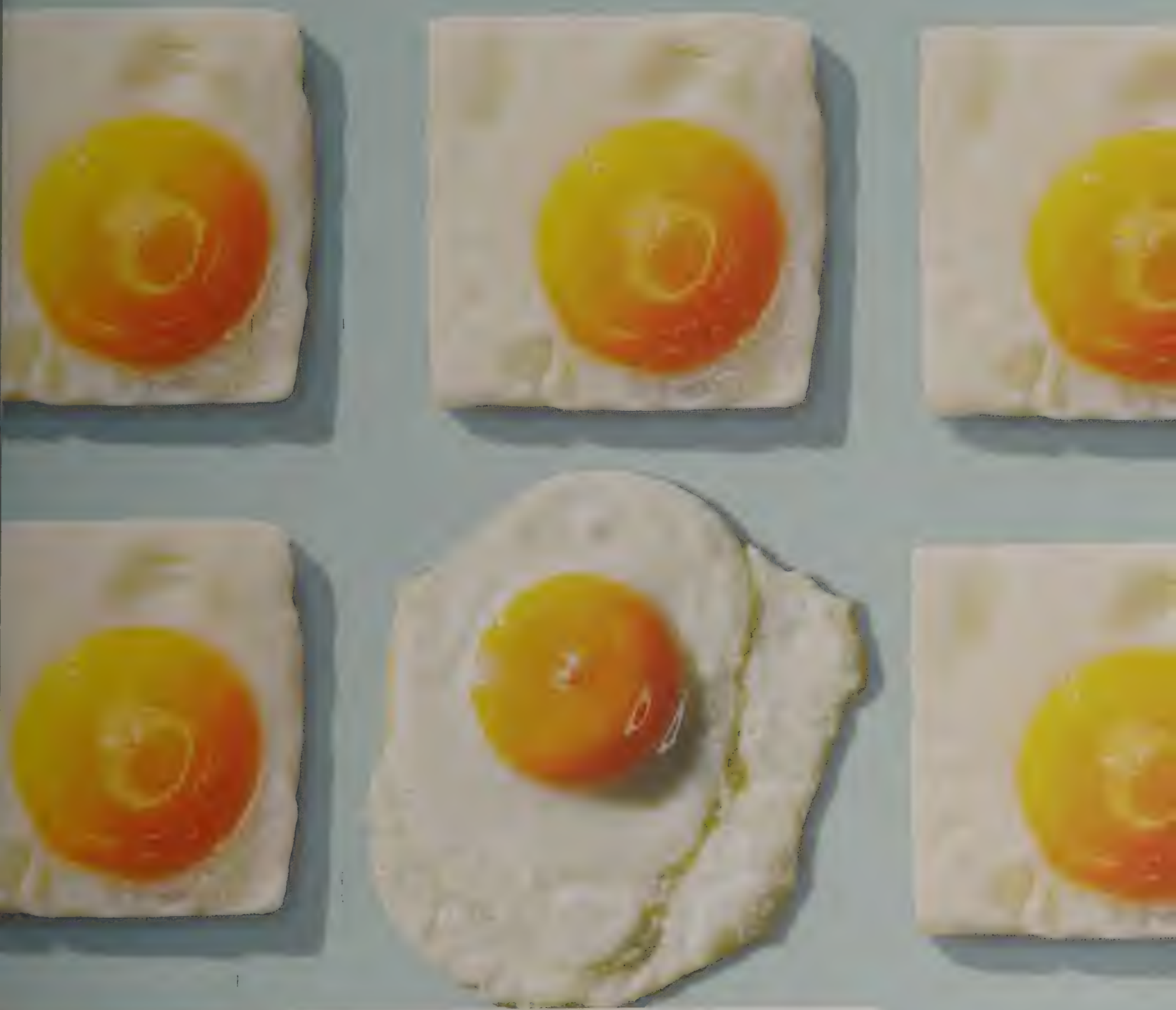
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FOOD

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Assemble the ingredients

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Eat, drink, and create community. *By David Nagahiro AIA*

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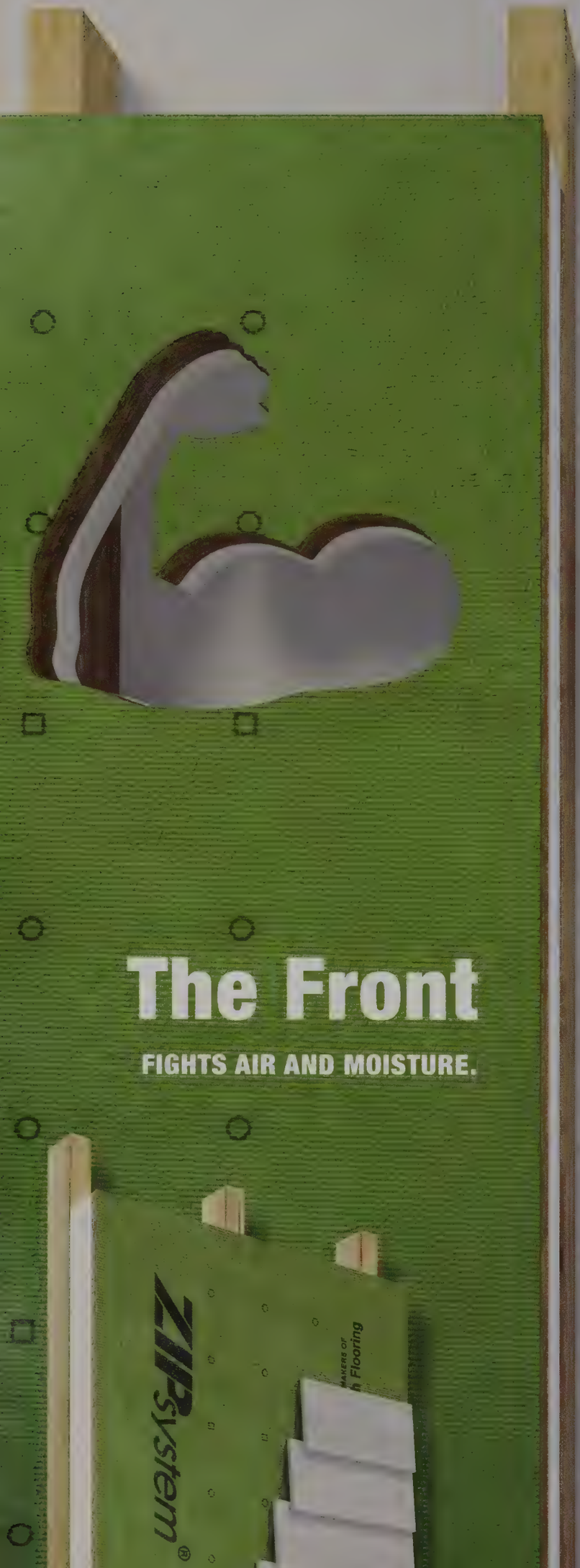
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Mackerel from *Perspective* series, 2018. Photo: Suzanne Saroff

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Assembly Line 1, 2015. Photo: Lena Granefelt for *Hunger* magazine

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DINNER PLANS

Do you eat to live or live to eat? It's axiomatic that food, like shelter, is a basic human need. But both also can be crazily refined, exalted even, into creations that have only a passing relationship to their essential purpose as fuel or refuge. When you're digging into a plate of red velvet waffles with sriracha fried chicken, it's hard to remember you're engaged in an act of survival. And when you're standing outside the Centre Pompidou in Paris, say, or the Catedral de Brasília, the fact of a roof seems almost incidental.

Chefs build their monuments much as architects do, with collective, integrated teams and constant investigation and iteration. In "Setting the table," page 28, architect Jennifer Preston and consultant Tristan Roberts explain how getting any kind of team to prepare a meal together reinforces "the skill sets of collaboration." Empathy, flexibility, attention, patience—these are requirements in a successful kitchen as much as in a studio.

Food and architecture often march to the same societal trends. Local, indigenous ingredients serve the same purpose in buildings as they do in salads: they are more sustainable; produce less waste; and are more authentic to a place, culture, and climate. Evolution may explain why spicy foods are common in hot countries (because the antimicrobial properties in peppers helped to preserve foods in the millennia before refrigeration). So, too, certain architectural typologies evolved in certain climates, whether the open porches of Southern plantation houses, designed to catch every breeze, or the steeply pitched roofs of snowier latitudes.



Photo: Bert Seager

Even our language carries echoes of each discipline. We say a dish is not "balanced" if it has too much acidity or sweetness. We speak of a vintage wine's "body" or "structure" and praise its "finish." Is it any wonder some architects become chefs? Or that the reviled form, the McMansion, got its name because it is generic, cheap, and supersized?

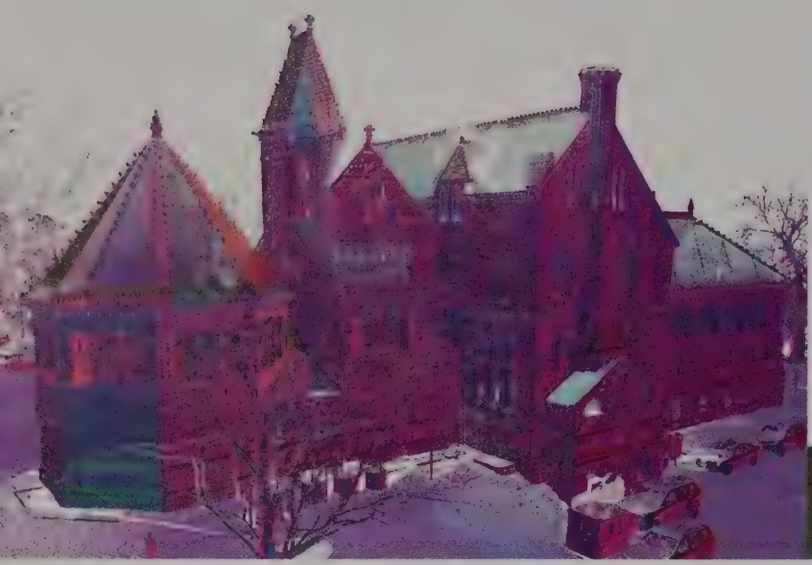
In the book *Drawdown*, a solutions-focused guide to reversing the effects of climate change, editor Paul Hawken ranks food at numbers 3 and 4 among the top 10 things we can do to create a more sustainable future. Reducing food waste and eating a plant-based diet are demand-side solutions to an agriculture system that often does more to deforest and pollute the planet than to feed the world.

The relationship between food and the earth is a dynamic one. In "Assemble the ingredients" (page 22), Boston-area architects and activists offer five short essays about food as a neighborhood planning tool, including urban beekeeping, restaurants as community catalysts, and land trusts as a way to slow the march of gentrification.

This year, for the first time, the Boston Society of Architects/AIA is offering an award for excellence in hospitality design, a recognition of the growing role of the food sector in the profession. One eye-popping example is the experimental restaurant Enigma in Barcelona, Spain, designed by RCR Arquitectes, the 2017 recipients of the Pritzker prize. The restaurant is all narrow curves and translucent resin walls, sea urchin sauce and teardrop peas. "The type of cuisine we make is determined by the space," chef Albert Adrià told the publisher Phaidon. "If we were, for example, surrounded by nature, we would cook entirely different dishes."

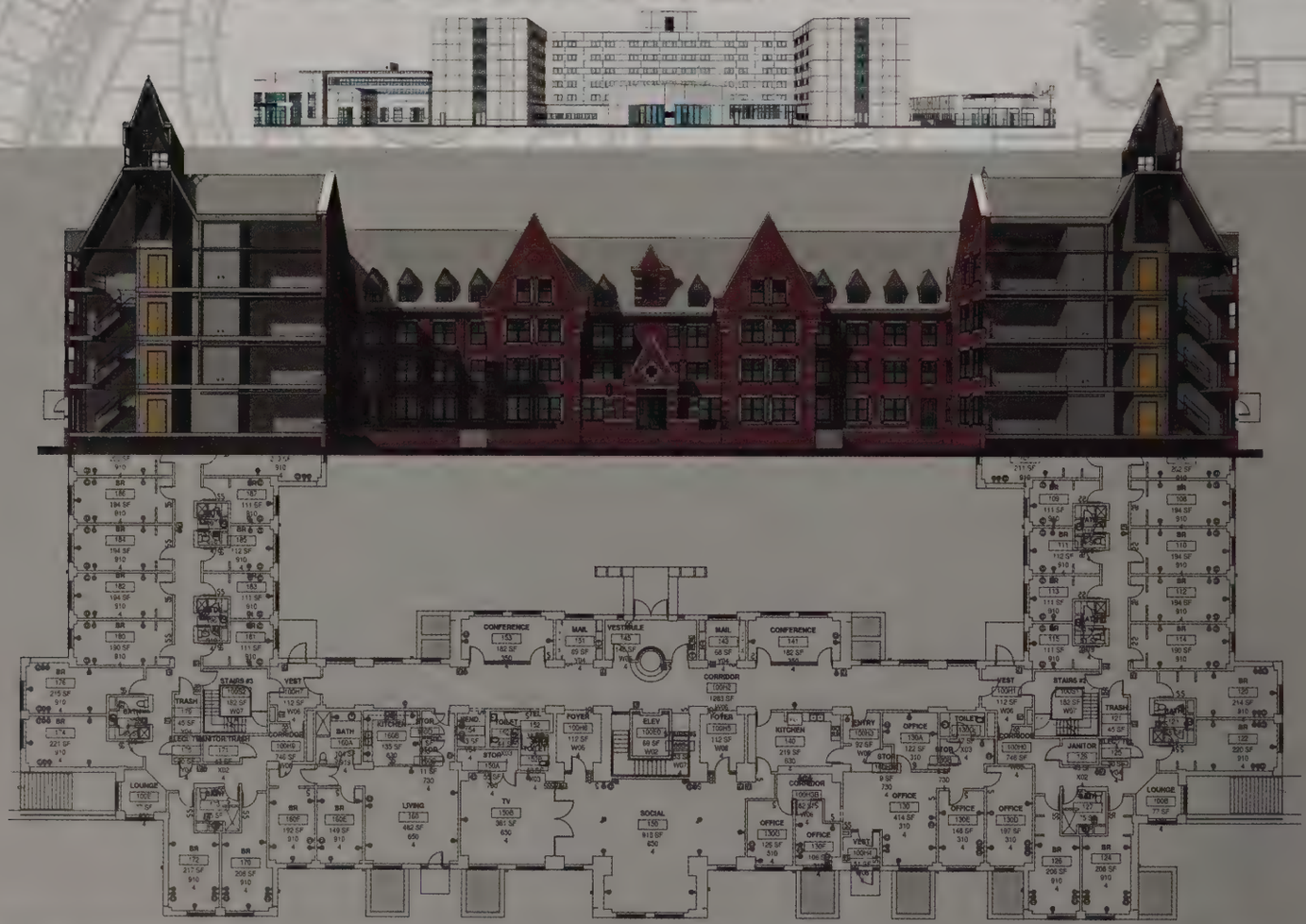
Not all restaurants need to be pantheons of design; even the most rudimentary food shack can exude a certain vernacular charm. (See the photo at left, taken this year in Jamaica.) The most basic structure created for meals, after all, is not even a building, but the table. It is where we meet, where we argue and celebrate, often where we pray. Far removed from the vainglorious concoctions of food as sculpture, breaking bread is a profound and ancient act of trust, and this simple communal slab is the foundation for peace and understanding. ■

Renée Loth HON. BSA
Editor





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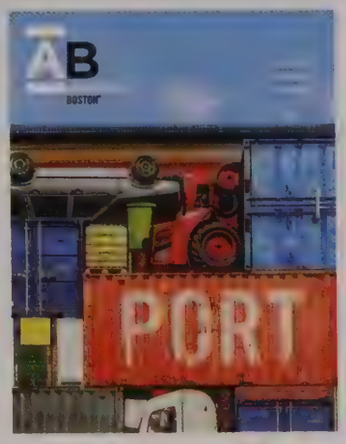
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ON "PORT" (SPRING 2018)



Projecting the future needs for Boston's Designated Port Areas (DPAs) is no easy task. Forty years ago, when the DPAs were first created, a key question focused on whether commercial shipping would rebound and, if so, in what form. Today, we're seeing a healthy increase in container traffic and cruise ships, along with continued imports of petroleum, jet fuel, and automobiles. What to expect, looking forward?

One trend to ponder is the future of petroleum imports. The City of Boston has pledged to be carbon-free by 2050; the Commonwealth has committed to an 80 percent reduction in greenhouse-gas emissions by the same date. Meeting those commitments will require a massive shift to renewable energy and a dramatic reduction in the use of fossil fuels for transportation and home heating. That, in turn, could significantly reduce the need for importing oil and natural gas to the tank farms and storage facilities located in the inner harbor DPAs. What is the future for road-salt imports, in a climate-changed world with shorter and warmer winters?

One implication is that we may not need all four of Boston's DPAs, although the carbon benefits of shipping freight via ship or barge instead of trucks might argue otherwise. Thanks to the Climate Ready Boston initiative, we know that a considerable amount of waterfront land in places like East Boston will be needed to create resilience buffers against flooding caused by sea-level rise. Should the DPA designation in those areas be reconsidered?

BUD RIS
Senior adviser
Boston Green Ribbon Commission

As President Kennedy said in 1962 to sailors from Australia, we are not so much "separated by an ocean, but—particularly those of us who regard the ocean as a friend—bound by an ocean." When the ocean connects us to the rest of the world, protecting access to that edge is critically important public policy. Once that connection is severed, once condos grow up along the waterfront and the ocean is only a backdrop for photographs, that change is irreversible and that access point is lost.

As the mayor of New Bedford 30 years ago, I could describe the city in one word: *seaport*. We send our people to sea. We did that in whaleships; we do that today in fishing vessels. It defines us, but it doesn't limit us. Today, there is short sea shipping. Ferry boats to the islands. About 2,000 yachts. Research boats for the developing offshore wind industry. Barge traffic. Recreational fishermen. Whaleboat rowing clubs and eight-oared crews. All manner of vessels use the water's edge to seek opportunity—for profit, for knowledge, for recreation, for fulfillment. Just to be at sea.

This is what a port is about. Whether it is the Port of Boston, New Bedford, or all the other ports, may their connections remain strong.

JOHN BULLARD
Westport Point, Massachusetts

In "Time's sentry," Terri Evans provides an eloquent tribute to the 1847 Custom House and the 1915 Custom House Tower that flows fluidly between the evolving history of the architecture, the building's use, and the character of the city around it. It was a beautiful reminder of how much we can learn about Boston with a view from the Custom House. But what can we learn from a view *of* the Custom House?

This icon of maritime history on the city skyline is in danger of disappearing from view. The proposed designs of Dock Square Garage north of Quincy Market have sloped the highest floors inward to maximize views of the tower from the Rose Kennedy Greenway as one walks south. Meanwhile, the Municipal Harbor Plan would allow the redevelopment of the Harbor Garage to block the view of the clock tower that has served as a defining feature welcoming anyone arriving by sea—whether by regional ferry, international cruise ship, or local sailboat.

KATHERINE F. ABBOTT
President and CEO, Boston Harbor Now

I very much enjoyed revisiting Dry Dock No. 4 in the "Port" issue. In 1988, I selected this site for my entry into the Boston Visions competition. My rationale at the time was immediate and intentional: the dry dock was, without question, the most majestic component of the built environment I encountered upon arriving in Boston in 1984. Not only grand in scale, its construction was awe-inspiring, the closest thing I had seen to Piranesi's depiction of the foundations of Hadrian's Mausoleum. Accordingly, any architecture proposed for this space would be provisional while the massive granite blocks of the structure would persist.

I appreciated the dry dock's low profile in every sense of the term. It was built to play a supporting role and even disappear completely when the waters of the Atlantic were allowed to enter. It would never have the grace of the ships it would harbor. It wasn't built for admiration or beauty. Relative to my then–recently completed graduate studies,

which tilted toward the ephemeral, Dry Dock No. 4 was a testament to the power of fact and physics.

At the time of the Boston Visions competition, the Institute of Contemporary Art was looking for a new home, something I discussed with then-director David Ross. The proposition was simple: Turn the museum inside out and imagine it as something of an aircraft carrier with objects, installations, and events landing on the deck of Dry Dock No. 4. To heighten the curatorial and experiential drama, the Atlantic Ocean would be lapping at the gallery doors with only brute force preventing the potential inundation of the entire spectacle. In short, the stark drawing I offered 30 years ago using the dry dock as a backdrop was intended as an essay on permanence and value, and how both are always registered in the built environment.

WELLINGTON (DUKE) REITER FAIA
Senior adviser to the President
Arizona State University

After World War II, docks, cranes, rail lines, warehouses, and industrial artifacts permeated Boston Harbor, evincing its rich history as a major port. Today, it boasts housing, offices, and multiuse amenities. This transformation is commendable, but Boston may be losing its distinctive qualities of place. How can the harbor remain linked to its maritime heritage while creating a future-oriented place?

Visiting Hamburg recently, I saw how smart design achieves this goal. Accompanying throngs of people walking along cobblestoned St. Pauli Hafenstrasse, I passed brick warehouses renovated into housing and offices. Newer buildings fill the gaps left from Allied bombings. Giant rolling steel doors protect them from storm surges.

Eventually I spotted Herzog & de Meuron's Elbphilharmonie concert hall, the cynosure of HafenCity. This remarkable port district is a network of quays, docks, and public spaces integrated with a mix of uses. Industrial relics from Old Hamburg remain at each street corner, dock, and bridge. Yet Hamburg remains an active port. Ships navigate the Elbe, dry docks line its southern side, and cranes punctuate the skyline.

Hamburg demonstrates how historic ports can be transformed over time. It builds on its history while generating new design interventions resilient to rising tides.

PAUL LUKEZ FAIA
Principal, Paul Lukez Architecture
Somerville, Massachusetts

Perhaps the greatest secret to the Port of Boston's success is its diverse supporters over the decades, ranging from Governor Paul Cellucci, who established the Seaport Advisory Council that funded numerous Boston projects, to Congressman Mike Capuano, who secured $125 million for the Chelsea Street Bridge to ensure safe passage of oil tankers. That spirit of bipartisan cooperation has in no small part helped to make Boston what it is today.

VIVIEN LI HON. BSA
Boston

Through thoughtful articles and creative graphics, the "Port" issue gave readers a renewed appreciation for Boston's working waterfront and insight into day-to-day activities. Many readers may have never set foot on a marine terminal, but if they enjoy a glass of Italian wine, relax on their living room couch, or benefit from road salt on winter roads, they now know the value of the Port of Boston. We will keep working to enhance that value to consumers, protect and grow the 7,000 blue-collar jobs in the working port, and support the 1,600 businesses across Massachusetts and the region that use our waterfront to access global markets.

LISA WIELAND
Port director, Massachusetts Port Authority

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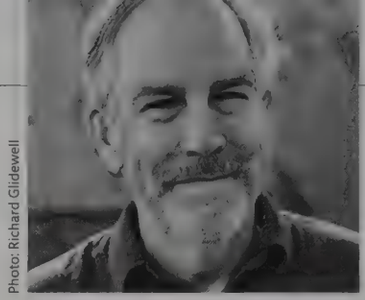


Photo: Richard Glidewell

Alex Beam ("Curtains," page 32), a regular columnist for *The Boston Globe*, often writes about architecture and is working on a book, *The Woman in the Glass Box*, about Dr. Edith Farnsworth, Mies van der Rohe, and the Farnsworth House of Plano, Illinois. It will be published by Random House in 2019.

Jennifer Preston and Tristan Roberts
("Setting the table," page 28)



Photo: © David Katzenstein



Photo: Courtesy Tristan Roberts

Jennifer Preston honed her knowledge of integrated design as a sustainable design director in New York City. She has since escaped Brooklyn for the Berkshires and runs a small architecture partnership, designing space with intention.

Tristan Roberts is a sustainability consultant working with stakeholders across the industry to dislodge inertia in the design process. He and his team facilitate transformation through The Laurentia Project, their nonprofit research group Laurentia Blue, and a physical retreat space they're expanding in southern Vermont.



Photo: Courtesy Hancock Shaker Village

Jennifer Trainer Thompson ("A simple gift," page 36) is president and CEO of Hancock Shaker Village, a living history museum in Pittsfield, Massachusetts. She is a former senior vice president at Massachusetts Museum of Contemporary Art, where she worked for 28 years since the museum's inception. A graduate of Tufts University, she has written 22 books on subjects ranging from food to science and has been nominated for three James Beard Awards.

Eric Aulenback, Cheryl and Jeffrey Katz, and Alison Arnett
("3 courses," page 38)



Photo: Drea Catalano

Eric Aulenback ("Aspire") is a restaurateur who co-owns Lincoln Tavern and Restaurant, Capo Restaurant, Loco Taqueria and Oyster Bar, and Fat Baby in South Boston, Monument Tavern in Charlestown, and 224 Boston in Dorchester.



Photo: Deborah Jones

Cheryl and Jeffrey Katz ("Design") of C&J Katz Studio in Boston have designed dozens of residences, restaurants, retail shops, exhibits, and workspaces.



Photo: Steve Marantz

Alison Arnett ("Enjoy") is a freelance writer concentrating on food and agriculture. She was *The Boston Globe*'s restaurant critic from 1992 to 2007.



Photo: Ana María Cardenas

Alberto J. Cabré ("Sweet memory," page 60) is an architect with experience in residential, institutional, and commercial projects, and an adjunct professor at Wentworth Institute of Technology. He is the chef-owner of Casa B, a tapas restaurant in Somerville, Massachusetts, and has worked on the design of several area restaurants.



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AHEAD

Objects of Use and Beauty: Design and Craft in Japanese Culinary Tools

Fuller Craft Museum, Brockton, Massachusetts
June 2–October 31

Sushi knives, lacquer bowls, matcha whisks—the utensils of Japanese chefs are timeless, even ancient. Yet their functional lines and lack of ornamentation evoke an unmistakable Modernism. This exhibition promises to display the finest, sleekest Japanese cooking (and serving) implements, each with a specified purpose.

Although they may seem indistinguishable to Western eyes, the tools reflect subtle regional or historical differences. A chef in Tokyo will employ a different knife for slicing *unagi* (eel) than a chef in Kyoto—and a different technique for the slicing. "Art and craft are not separable ideas in Japanese aesthetics," said co-curator Merry White, an anthropologist who has written several books on Japan. White and cookbook author Debra Samuels have scoured Japanese and domestic sources—including their personal collections—for the exhibition, which they hope will include cooking demonstrations and events.

For White, Japanese culinary tools are inseparable from their users. "The user develops a rapport with the tool, a kind of agreement." Over time, a rice paddle will take the shape of the user's hand: A marriage of form, function—and feeling. —Renée Loth

ABOVE
Teabowls, teabox, tea spoon, tea whisk; ceramic, wood, lacquer, bamboo; 6 × 3 inches, 5 × 3 inches, 2.5 inches, 3.5 inches. Photo: Joanne Rathe Strohmeyer

The Lure of the Dark

MASS MoCA, North Adams, Massachusetts
Through January 2019

I love the dark. In the dark, my eyes seem to reach out into space like phantom limbs. In reality, the eye is more like a black hole than a limb, where all light is absorbed in the pupil. Step into the light, and the eye squints, the iris constricts, and the pupil narrows to a tiny pinhole. Turn off the lights, and the black hole opens wide to absorb as much light as possible.

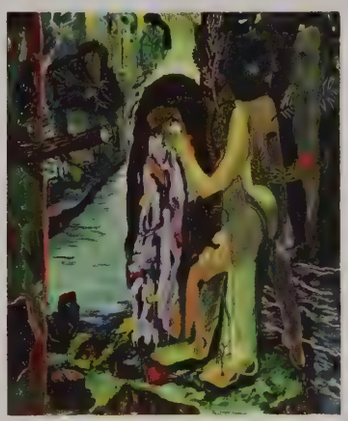
Visiting this exhibition is like stepping into a dark theater. Paintings are spot-lit to acquire a chiaroscuro in the space, drawing their luminosity out of the surrounding darkness. Each painting pulls you into its own dreamlike scene. Shara Hughes' ebullient landscapes stand out with exuberant colors and dynamic compositions. Her haptic surfaces indulge our senses with a variety of fluid gestures and glittery fields. Wilhelm Neusser's quieter nocturnes enchant the viewer with deeply romantic, painterly scenes that pay homage to both Gerhard Richter and Caspar David Friedrich.

Fourteen painters present diverse interrogations of darkness as a visible and invisible entity. William Binnie's realistic paintings on raw canvas confront the history of racism. Sam McKinniss paints online images in glowing neon, revealing darkness as a contemporary cultural spectacle. Cy Gavin, Alexandria Smith, and Kenny Rivero dig into childhood memories, portraying the psychological fabrications of night, including folktale fears and fantasy fables.

Other artists focus on the phenomenology of darkness as a perceptual experience. Jeronimo Elespe creates hazy celestial scenes using pointillistic dots of silvery-hued paint. Cynthia Daignault presents a series of small night scenes rendered in luscious applications of oil on linen. Patrick Bermingham's gallery asks the viewer to allow time for the eyes to adjust to the dim light. I sit down and watch as two large-scale paintings slowly reveal the subtle blues and warm grays of a shadowy moonlit woodland. The obscure lighting leaves me wanting more as I'm unable to perceive their surface, materiality, or execution. I can't help wonder how these paintings would look under a bright light. Would I be disenchanted? Perhaps. The sparse, moody light feels integral to the installations' ability to theatrically transport me, if only for a moment, into the solitude of nature at night.

SANDY LITCHFIELD ASSOC. AIA is an artist and assistant professor in the architecture department at the University of Massachusetts Amherst.





ABOVE
Green Monster, by Shara Hughes, 2013. Oil, enamel, acrylic, spray paint on canvas, 60 × 54 inches.

LEFT
Nocturne/Doublemoon (1728), by Wilhelm Neusser, 2017. Oil on linen, 57 × 67 inches.

Images: Massachusetts Museum of Contemporary Art



SEEN

The Isaac Bell house

Newport, Rhode Island

I first photographed the Isaac Bell house for a book on the Shingle Style in 1995, just after it had been acquired by the Preservation Society of Newport County. After 40 years of hard use—first as a nursing home, then as apartments and offices—this masterpiece of American architecture was on the verge of collapse. I wanted to capture the Japanese-inspired open planning of the ground floor—a radical innovation when McKim, Mead & White designed the house in 1881—but my efforts were vexed by the deterioration of the structure. The header beam spanning the vast opening between the living hall and drawing room had sagged, leaving the celebrated rolling doors stuck in their closed position.

Two decades later, I was delighted when my work on a new book about the Shingle Style took me back to the Isaac Bell house. In the intervening years, the Preservation Society had commissioned Mesick Cohen Wilson Baker Architects, a firm specializing in historic preservation, to produce a historic structure report about the house and to supervise an exacting restoration performed by Kirby Perkins Construction. The house was stabilized, and its decorative splendor was restored. I was able to open and close the once immovable rolling doors with just the pressure of a fingertip and to capture—at last!—the flow of space from room to room and into the landscape.

BRET MORGAN is an architectural photographer. *Summer Houses by the Sea—The Shingle Style* will be published by Rizzoli in fall 2018.

GENIUS LOCI

The Mohawk Trail motel

Impeccably planned, the heist goes off without a hitch. Connections are met, the spoils divided, and off you ride into the sunset with sacks of cash, art, or jewels. It's the perfect crime, and we all fantasize about it. At least I do, as I while away the many hours I spend behind the wheel of a rented car on my business trips to western Massachusetts. Most often these ventures find me on the Mohawk Trail, the stretch of Route 2 that runs between Athol and Williamstown. In addition to seasonal souvenir stands and obsolete view towers, the Mohawk Trail is chockablock with roadside motels of a particular era, unassuming structures that popular culture loves to depict as way stations for desperate people on the run. They figure prominently in my imaginary capers.

French King, The Olde Willow, Giovanni's Red Rose, Oxbow Resort—the motels of the Mohawk Trail offer the windshield archaeologist an object lesson in the evolution of American leisure travel, from tourist camps to motor courts to motels. The Internet may tell you they are permanently closed, but they mostly hang on, travelers having long since shifted from highways to freeways.

One of these, the Eastern Summit Motel, has gone dark, its empty shell perched above a scenic overlook near Whitcomb Summit in Florida, Massachusetts. (Midcentury postcards billed this region as "America's Switzerland.") A pair of faux stone gabled-roof buildings containing 14 rooms, the motel is boarded up but relatively intact, notwithstanding the odd soffit droop. A large red metal arrow lies behind Room 4, pointing at nothing in particular.

The Eastern Summit Motel has a kind of gravitational pull on me. It's hard to resist the temptation to pull over and walk around it; I often do. Though abandoned, the motel still feels very much as depicted in those postcards, ghosts of tourists past taking in breathtaking views of the Deerfield Valley. Other presences seem to linger here, too. These are the phantoms that have made motels such uniquely interesting architectural items in cinema. We don't know exactly what goes on inside that carpeted room with the color TV, vibrating bed, and quilted satin paper–lined oak dresser, but we suspect and hope it is anything but ordinary.

The roadside motel is easy to romanticize; it has become synonymous with the open road and all of its freedom, possibility, and isolation. It exists in the margins of society: out of town, on the edge of the highway. A spartan alternative to the *hotel*, typically without the latter's shared social amenities. And although the roadside motel has ceded considerable ground to the "dependable" allure and convenience of the larger chain operations, it is a persistent and inscrutable mythology, harboring secrets not easily unlocked with a plastic key card. Whether you're on vacation or on the lam, the roadside motel is not simply a remnant of 1950s two-lane culture. It is a space *apart* from everyday life, where you can reinvent yourself, your past, your getaway.

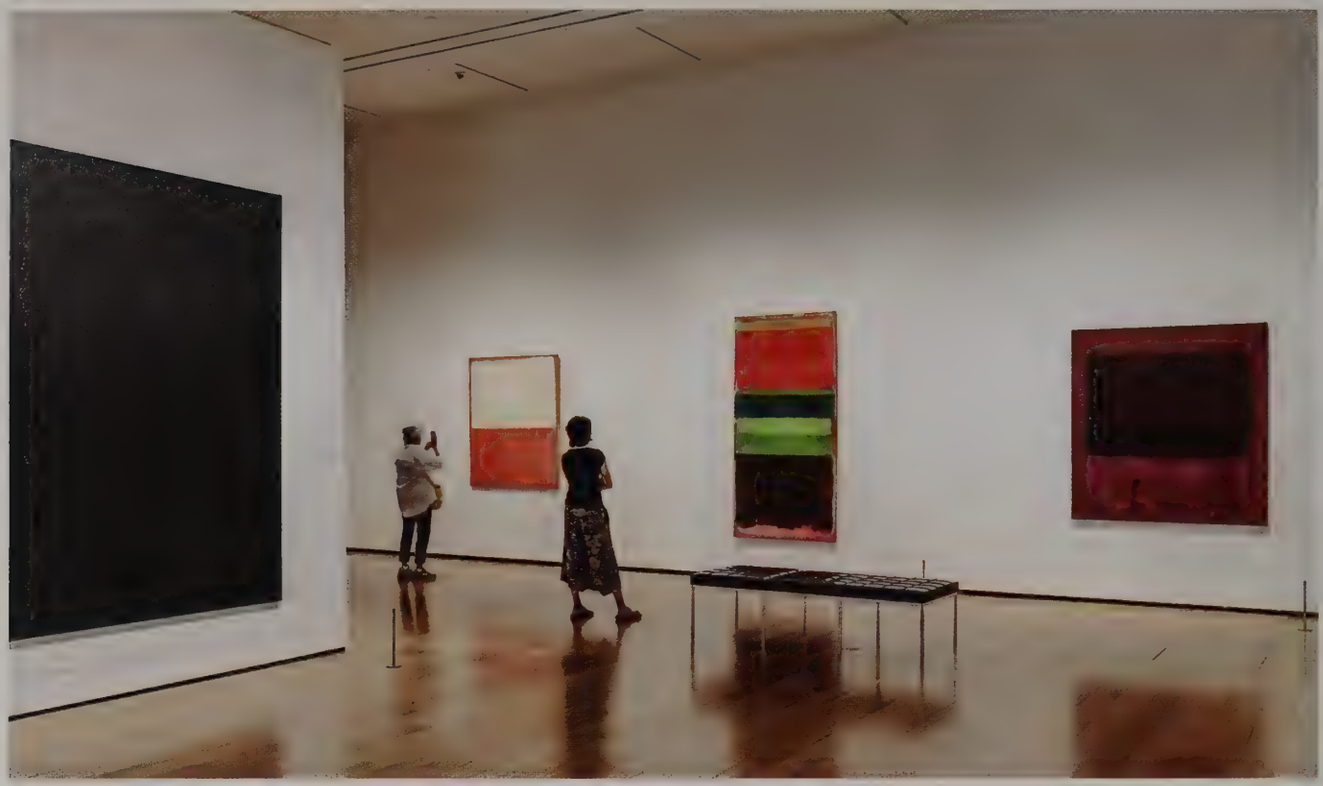


HENRY SCOLLARD AIA, founding principal of HANK, is currently working on several projects in North Adams, Massachusetts, including Tourists, a 48-room hotel, and Loom, a culinary destination.

ABOVE
Eastern Summit Motel postcard, circa 1950s.

BELOW
Memories of the past linger at the Eastern Summit Motel, now abandoned.
Photo illustration by Henry Scollard AIA





LEFT
Mark Rothko: Reflection, a display of 11 paintings. Photo © Museum of Fine Arts, Boston

BELOW
The Dead Christ with Angels, by Rosso Fiorentino, about 1524–27. Oil on panel, 52.5 × 41 inches. Charles Potter Kling Fund. Photo © Museum of Fine Arts, Boston

Seeking Stillness

Museum of Fine Arts, Boston
Through September 3, 2018

What is stillness? A word describing the absence of physical movement is also evocative of mental peace. Is stillness permanent or ethereal? It's a sought-after human experience, yet so many struggle with how to find it. Whether we meditate, read, or take long walks, strategies for revealing a sense of internal peace involve a sustained personal effort. With yoga, historically defined as the stilling of the whirling mind, "stilling" is a verb. One is actively involved in removing the fidgets of mind and body to reveal the quiet calm of stillness.

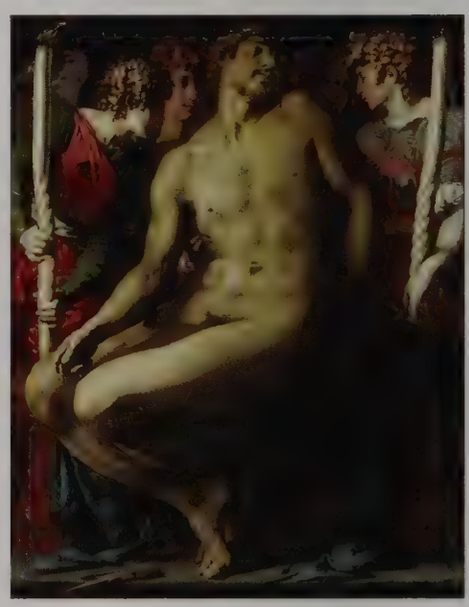
In *Seeking Stillness*, the Museum of Fine Arts juxtaposes sculpture of three dimensions with expressions of formlessness. The serene and mundane subject matter point out the true beauty and potential banality of finding and experiencing stillness. At face value, the work conveys meaning. With a bit more effort, engaged viewers will practice their own "stilling."

Mostly contemporary, with a notable exception, the art is organized into three categories over as many galleries. The "process" gallery showcases the art making itself and the meditative practice that absorbs and engages creator and viewer. Free of recognizable subject matter, the art encourages us to evaluate, have an opinion, and look again. The "nature" room celebrates sprawling landscapes and magnifies detailed geology. Immersed in the power and abstraction of nature from different scales and vantage points, one can begin to recognize one's own encompassing and interwoven nature revealed in stillness. The "spaces" gallery showcases sculpture, diagrammatic abstractions, and evocative photographs where conveyed meaning extends beyond the boundaries of the captured subject matter. With a greater sense of context, more meaning is revealed.

Set aside in its own alcove, Rosso Fiorentino's *The Dead Christ with Angels* depicts the exact moment of resurrection. Like the instant when what goes up changes direction to come back down, the stillness here depicts the shift from mortality to divinity, from death to everlasting life.

A worthwhile exhibition, *Seeking Stillness* culls diverse artistic voices, each offering specific insight to inform the seeker's independent process and style of exploration.

PETER CROWLEY is a designer turned yoga teacher. He lives in a modern house in a Colonial town with his partner and two dogs.





Succeeding Where Mixed-Income Transformation Falls Short: A Path to Equity and Inclusion in Our Cities

Harvard Graduate School of Design
March 2, 2018

America today is in the middle of an identity crisis as it simultaneously diversifies and polarizes. In Case Western Reserve University professor Mark Joseph's words, our country is asking, "Who are we?" The divide has led to concentrated urban poverty, which disproportionately affects minority communities. Joseph, an associate professor in community development, is the founding director of the Case Western National Initiative for Mixed-Income Communities (NIMC). He collaborates with Amy Khare, its research director, to combat inequity through efforts that promote and sustain economically and racially diverse communities.

Their work focuses on creating communities, not just building units, through mixed-income developments, inclusionary zoning, and systemic changes in related policy and markets. Joseph and Khare have adopted a framework to achieve success through a racial-equity lens, by focusing on site and neighborhood changes, attracting market-rate buyers, and avoiding displacement. However, they see room for improvement when it comes to opportunities for upward economic mobility and social inclusion within these communities.

They work as a team on both social and systemic sides of the spectrum. Khare looks at the bigger picture: "We're interested in what it would take to shift the systems and programs and services so that we are really connecting our housing system to the labor market…to really get at the racial gaps that have been perpetuating poverty for years." Joseph works on creating spaces for dialogue within these developments—"who has voice, who has influence, who engages"—to break down stigmas and expand powers to all residents.

Although they may be pioneers of mixed-income developments combined with inclusionary zoning and equitable systemic changes, they realize their work is not yet done. "We're doing this so people have better lives, better trajectories," Joseph said—goals worth fighting for.

ANASTASIA LEOPOLD, a second-year architecture student at Northeastern University, hopes to work on low-income housing in her career.

ABOVE
Cascade Village Apartments, a mixed-income community in Akron, Ohio. Photo courtesy NIMC





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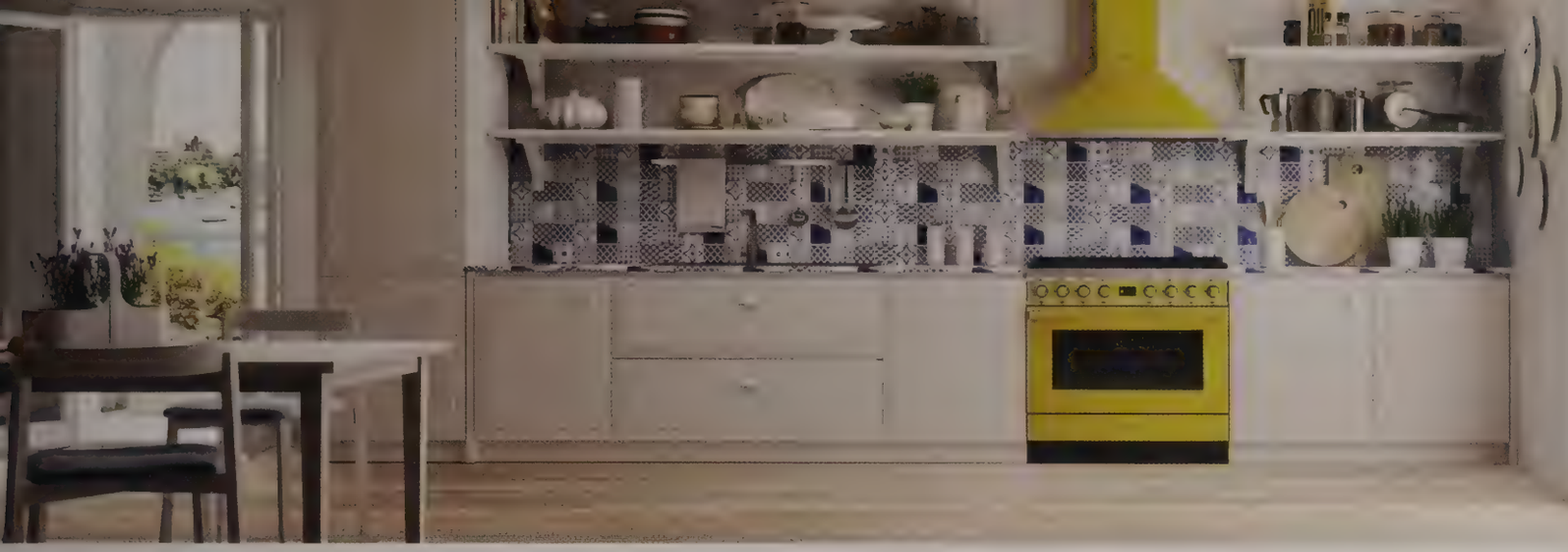
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FOOD

SUMMER 2018

How does this basic human need intersect with design? Dishing up thoughts on the dining experience—from measured rituals to decorated spaces to ingenuity of form.



Kiwis from *Perspective* series, 2018.
Photo: Suzanne Saroff

ASSEMBLE THE INGREDIENTS

FROM NEIGHBORHOOD RESTAURANTS TO ROOFTOP APIARIES, FOOD IS CHANGING THE WAY WE PLAN AND USE URBAN SPACES. HERE, WE PRESENT A SMORGASBORD OF NEW IDEAS IN LAND USE, EQUITY, AND COMMUNITY DEVELOPMENT THROUGH FOOD.

Illustrations by **KYLE NELSON**/Stoltze Design



PLOTTING AN URBAN REVOLUTION

by Glynn Lloyd

We live among many design flaws. The one about to affect us most is our dysfunctional and dangerously fragile food system.

Most of our food comes from large mono-crop agribusinesses that rely on cheap labor and fossil fuels. Fresh water and soil are two of the most critical natural resources for our species, and their depletion threatens the ability of our next generation to comfortably survive. It is no longer sustainable or practical to have less than 2 percent of the US population directly involved in its own food production.

Across the globe we see examples of a reimagined, wiser food system, in which the distance between food producer and consumer is radically shortened. Ten years ago, a few women sitting around a kitchen table in Todmorden, England, started organizing to transform the town's public spaces into farms filled with edible herbs and vegetables, free for the taking. The "Incredible Edible Todmorden" movement has spawned 100 similar programs throughout England. In Chicago, Sweet Water Foundation is reclaiming abandoned land and property and putting art, innovation, and food at the center of its repurposing, leveraging the existing local culture of a historically African American community.

We have a unique opportunity here in Boston to build on these inspiring ideas. Greater Boston has a strong local food community that has built deep relationships over the past decades. An important participant is Roxbury-based Urban Farming Institute. Over the past five years, UFI has trained dozens of master growers specializing in small-plot intensive production, reconnecting thousands of individuals to their food supply through conferences, workshops, and farmers markets. It was instrumental in passing Article 89, the change in Boston's zoning laws that allows urban farming as a right.

Last year, in partnership with Historic Boston, UFI broke ground on the restoration of one of Mattapan's oldest buildings, an 18th-century farmhouse and barn that will open this summer as Boston's urban-farming cultural center. Just recently, UFI created the Urban Farm Community Land Trust as a vehicle to preserve open space and protect land for food production. One example is the Garrison-Trotter urban farm in a former vacant lot on Harold Street in Roxbury, which will be transferred to a land trust to help ensure its tenure against development pressures in the community.

The ingredients above signify a cultural shift. Imagine a not-so-distant future in which each household on your block has a market-sized garden and numerous fruit trees abound. A few of your neighbors have taken up farming chickens or rabbits. The smart app the kids are talking about is the one that monitors their custom-designed, residential aquaponics system. Common spaces—sidewalk medians, vacant lots, and unused parts of parks—are beginning to overflow with food production.

The practitioners, food activists, and community leaders working on this vision continue to be important navigators in steering our current food system away from the iceberg. Increasing the numbers of those who have influence on the design process—architects, landscapers, developers, those willing and able to reimagine a wiser design—can play an important role in accelerating the possible. ■

GLYNN LLOYD is executive director of the Business Equity Initiative at Eastern Bank and a founding board member of the Urban Farming Institute.



EAT, DRINK, AND CREATE COMMUNITY

by David Nagahiro AIA

In part thanks to placemaking guru Jesse Baerkahn, a new urban planning phenomenon has surfaced in Boston. In a city of communities, neighborhoods are being defined for the first time not by geographies, institutions, or ethnicities, but by food.

A decade ago, local developers asked Baerkahn and his colleague David Downing to bring a "retail and restaurant vibe" to Kendall Square's barren and lifeless streets. Today, the neighborhood is the thriving home of local cuisine, French pastry shops, sushi bars, and more. Baerkahn is the founder of the sought-after urban-placemaking firm Graffito SP (Special Projects). The secret to his success? Food.

Baerkahn has toppled conventional retail thinking by building community through taste buds and shared food experiences. "I think that there's a community within every restaurant, and a community that surrounds each restaurant," he said during a recent conversation at Fat Baby, South Boston's newest sushi bar. A passionate advocate for food and community, Baerkahn has an intuitive sense of what makes a place interesting and authentic. He uses food to both celebrate and define neighborhoods.



In an era when restaurants are replacing retail at an almost startling rate, Baerkahn is a resounding proponent for the creation of food communities. According to Baerkahn, the key to picking the right restaurant for a neighborhood—new or old—is finding an entrepreneur or restaurateur who understands and wants to work with the local community. The cuisine and restaurant design, he says, can follow. "I think those restaurants that are doing really well are those that understand their communities."

Equally, restaurateurs and entrepreneurs are looking for landlords who want to be involved in the food communities they are creating. The more revenue a restaurant can make, the more rent they are willing to pay; if landlords and developers believe in building a better neighborhood, Baerkahn says, "they become engaged in [restaurant deals] in a way that's really meaningful because they're trying their best to set somebody up for success."

This in turn sets the neighborhood up for success. Baerkahn says activating a neighborhood means creating a human scale and a walkable, enlivened street edge. "There are few things that do that better than a café or a restaurant." Restaurants also bring light and life into a neighborhood after dark.

"There's no doubt the desirability of neighborhoods has to do with their quality and quantity of food and beverage options," he says.

So what's next in Boston? Baerkahn cites urban food manufacturing: tap rooms combined with breweries, coffee roasters with cafés, and commissaries with bakeries.

This trend fits well with his observation that the modern diner wants to have a new, exciting food experience every week. He notes, though, that today's social media madness makes this a hard mark for restaurants to meet: "The challenge is that we're all seeing something first on social media and forming an impression before we walk in the door.... However, there is real power to being surprised and to experiencing real hospitality without preconceived notions."

Such hospitality is exactly what Baerkahn and his team are working to inspire by placing small, local food businesses in interesting new homes throughout the city. Boston's neighborhoods are collectively home to more than 2,900 food establishments today, so he worries this might be too much of a good thing. Still, done right, restaurants create food communities that help complete the placemaking puzzle. ■

DAVID NAGAHIRO AIA is a principal at CBT Architects in Boston.

BEE THE CHANGE

by Elena Saporta ASLA and Tom Rudick

Urban beekeeping is buzzing. In 2013, the City of Boston enacted Article 89, a zoning ordinance designed to encourage urban agriculture. Since then, honeybees have been appearing everywhere in the city. Hives are tucked away in the most unexpected places: backyard gardens, vacant lots, office building balconies. Several hotels, such as Taj Boston, the Intercontinental, and Fairmont Copley Plaza, have also gotten in on the action, featuring honey collected from their rooftop apiaries on their restaurant menus.

These important pollinators have turned previously unused urban spaces into places that benefit entire communities. Each day, thousands of honeybees will leave their hives and travel up to 3 miles to forage and pollinate plants in parks, gardens, backyards, and window boxes. Though it may seem counterintuitive, urban honeybees experience far better survival rates and produce more honey than their country cousins. The relative absence of pesticides and a greater diversity of plants put city bees at a significant advantage.

Honey is, of course, the primary output of honeybees. A single hive can produce more than 50 pounds of honey each year, a remarkable achievement given that each individual worker bee produces only one-twelfth of a teaspoon of honey in its lifetime. With so many beehives spread out throughout the metropolitan area, it is possible to seek out hyperlocal honey, produced just blocks away from one's home or place of work.

A miraculous substance whose properties humans have been incapable of synthesizing, honey functions both as a food source for the entire colony as well as an insulating material for the hive. Nectar, ingested by bees, is transformed into honey by stomach enzymes and injected into honeycomb cells. By flapping their wings, bees accelerate honey's evaporation process. Once the moisture content in the honey reaches a level of approximately 17 percent, each cell is sealed off with a wax lid to prevent fermentation. Properly stored honey, with its high acidity levels, has a seemingly infinite shelf life: jars in their original state have been unearthed from ancient Egyptian tombs. Honeybees also produce bee pollen; propolis, a caulking material with medicinal and antiseptic properties; and beeswax, used in making candles and body lotions.

Unfortunately, honeybee populations have been on the decline since the early 2000s. Mites, pesticides, herbicides, fungicides, disease, and habitat loss have taken a toll. This poses a direct threat to the agricultural economy, since approximately one-third of the food we consume is dependent on honeybee pollination. (The US Department of Agriculture values honeybees' contribution to the national food economy at 15 billion dollars annually.)



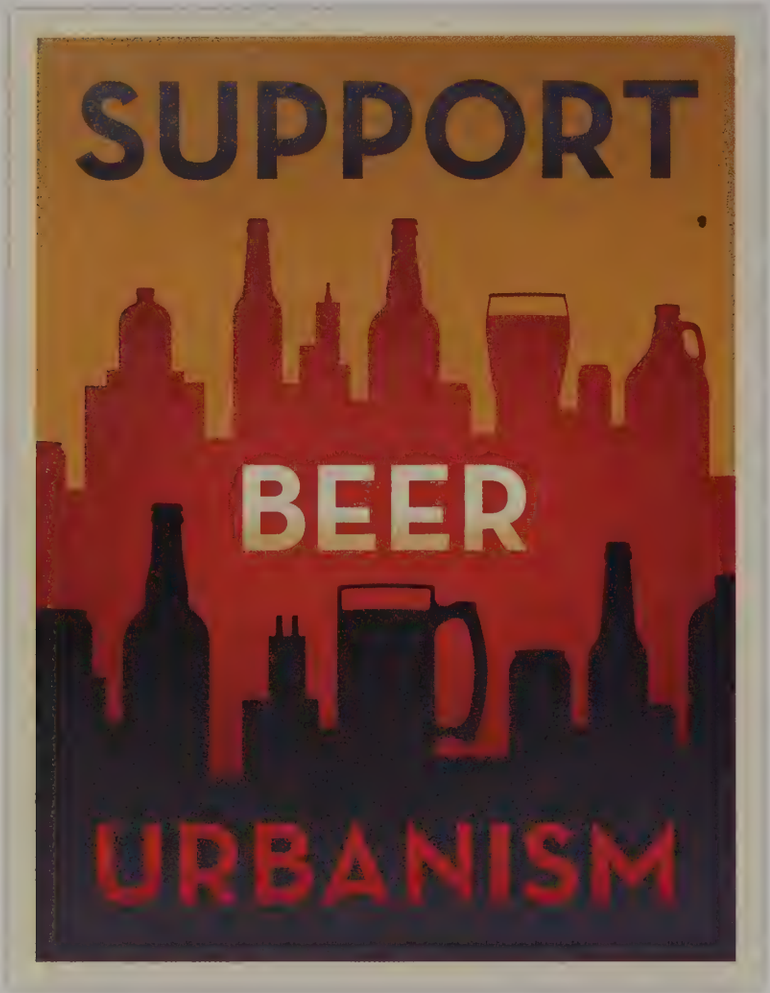
Urban beekeepers have a crucial role to play in maintaining healthy ecosystems. Consumers can create their own positive impact by choosing local honeys over commercial brands and planting bee-friendly plants, such as lindens, dandelions, hollies, mints, and native perennials favored by pollinators. Through education and outreach, strides can be taken to protect honeybees and support all they do for our local communities and food security. ■

ELENA SAPORTA ASLA maintains two hives in her Cambridge, Massachusetts, backyard.

TOM RUDICK is a hobbyist beekeeper of seven years who manages hives in Boston, Cambridge, Newton, and Winchester, Massachusetts.

TAPPING IN TO THE THIRD SPACE

by Anna Cawrse ASLA



Let's take a trip, back to 16th-century Germany, when regulations limited brewers to brewing only during the cool months of September through April. This law was passed to prevent fires from coals that were used to heat breweries and because cooler temperatures helped ferment purer beer. The government also encouraged breweries to increase the size of their existing beer cellars. To help cool these expansive spaces, brewers started planting broad-leafed chestnut trees above the cellars for shade. Eventually people started putting seating under the trees, and from these mandated constraints a new public space archetype was born: the biergarten. Five hundred years later, a renaissance of craft brewing has swept the nation and created the elusive outdoor and indoor "third space." Boston is no exception.

Like most craft breweries across the country, Harpoon set up shop in what was once considered a forgotten neighborhood. In 1987, Harpoon opened its doors in an old warehouse and brought people into an area many Bostonians had never visited. This burgeoning neighborhood we now know as the South Boston Seaport still uses Harpoon to help transform underused spaces into a lively public realm. Multiple times a year, people enthusiastically march shoulder to shoulder past walls constructed of beer cans to emerge onto a transformed asphalt parking lot. The parking lot and streets come alive with music, food, people, and, of course, beer.

If Harpoon has helped transform South Boston, then a new food hall development, Bow Market, is about to do the same for Union Square in Somerville. Anchored by a brewery and located in the shell of an old storage building, the W-shaped development will house more than 30 small-scale storefronts and provide opportunities for local food vendors, retailers, and artists. Remnant Brewery will be the largest tenant of the market, augmented by two public spaces that serve as the vendors' outdoor living room. This contemporary biergarten, currently under construction, promises to be the heart of "beer urbanism" in Somerville.

While larger craft breweries and food halls are revitalizing neighborhoods, smaller pop-up beer gardens are leveraging the energy they create to activate underused public spaces within the urban fabric. Sometimes all these spaces need is a little help with programming. Last summer, Trillium Brewery entered into a partnership with the Rose Fitzgerald Kennedy Greenway Conservancy, and its 4,000-square-foot open-air beer garden drew an estimated 100,000 customers.

Then the brewers took this model to another Boston neighborhood, where the historic Roslindale Substation building hosted Trillium over the winter. The substation sat unoccupied for more than 40 years until 2017, when it welcomed the craft beer cellar on its lower level. According to the Trillium team, the Garden at the Substation is part of the brewery's "growing initiative to cultivate temporary seasonal spaces in which to enjoy our beer."

Just as the original biergarten created community through an unexpected design solution, the new craft brewery scene is bringing people together all across US cities. From a brewery that is now one of the largest in the country to pop-up beer gardens, the craft beer scene in Boston is injecting a new energy into forgotten neighborhoods and underused public spaces. ■

ANNA CAWRSE ASLA is a landscape architect in Sasaki's Urban Studio and an adjunct professor at Northeastern University's Sustainable Urban Environments program.

ON THE MENU: A HEALTHY FUTURE

by Savinien Caracostea

Whereas early-20th-century Modernist architects promoted lifestyles of comfort and convenience through masterplans and manifestos that encouraged the domestication of nature, chefs of the early 21st century are reconnecting us with its wonders and benefits. It turns out the highly controlled atmospheres and assertive structures we have built for ourselves were just façades, and our actual environments are more fragile and necessary to our survival than we had believed. The sterile and abundantly stocked lanes of the supermarket, lined with foods grown and processed in distant factories, have steadily disconnected us from nature and the beauty of life itself. The industrial processes that were supposed to create inexpensive, healthy, and abundant foods have instead yielded increasing social disparity, food waste, obesity, and harm to our environment.

The agency that was once bestowed upon architects to tell us how to live, shop, work, travel, and lead happy and fulfilling lives now seems to have shifted toward chefs. As we look toward the future, new manifestos and masterplans drafted around food production and consumption are necessary, as societies will be based on a deeper understanding of the climates, patterns, and flavors of the world we live in. It is no surprise that the next generation of chefs has mobilized, sublimating traditions and championing causes—sustainability, healthy lifestyles, social equity—to fix the issues we are facing. Movements such as the "New Nordic Cuisine" herald a rediscovery of our roots through food, turning cooking into a powerful cultural, social, and political act—from soup kitchens to high-end restaurants.

Chefs advocating for local food consumption have spurred the proliferation of farmers markets and stimulated new economies and habits for city dwellers, from app-based food delivery services to urban farming. A new wave of young farmers and producers engage with the media, and with venture capitalists, and go on lecture tours in universities to discuss the future of the food industry. Fields once considered distant from any intellectual pursuit, such as cooking, are taking academia by storm, creating interdisciplinary and experimental research and activity. Restaurants and cookbooks have become the new vehicles for discovering cultures for locals and tourists alike. Simultaneously, the once rigid guidelines and hierarchical floor plans of the workplace are being replaced by more casual and informal interactions around eating, and the well-being of employees is valued as a foundation for their performance, creativity, and collaboration.



With the proliferation of digital technologies that challenge notions of place and time, we understand more than ever the ephemerality of a chance encounter, of a pastry eaten spontaneously one afternoon in the street, as being meaningful in our creative process and urban experience. Engaging with our senses, with our minds, and being confronted by unexpected flavors, textures, and ideas are essential to keeping us alive and connected—to each other and to our environment. It drives us toward a healthier, harmonious, and more diverse future. As such, the architectures one finds assembled on a plate, lasting but a moment, are more symbolic of our contemporary lifestyles, speaking to the challenges we face—transient and ever changing—than the rigid structures that surround us. ■

SAVINIEN CARACOSTEA is an architect, pastry chef, and entrepreneur who has designed cafés, bakeries, corporate headquarters, fashion retail locations, and residential projects. He teaches at the New York University Graduate Food Studies program.

SETTING THE TABLE



SLOW FOOD RITUALS
CAN STIR UP AND
NOURISH DESIGN THINKING



by Jennifer Preston and Tristan Roberts

An architect in our group of 10 measures out a tidy pile of flour onto a sheet of brown butcher paper. With the back of her hand she forms a void—a well—in its center. She cracks an egg, adds a bit of olive oil, salt, and water, and pours it into the well. Her fingers gently stir at the edges, allowing the flour walls to collapse, and a loose dough is formed.

"OK, your turn," she smiles, handing off a lumpy mound of potential to a dinner companion. Observing until now, a design engineer holds the dough and kneads it until it is smooth and elastic. A few more guests decide to take on making their own flour wells. Each shares wisdom or woes about the simple act of dough making, and conversations loosen. As the discourse begins to pick up, it's time to set the framework for the night ahead: We are here to be open and transparent, to think about both old and new. To allow for all ideas to be shared freely, we ask guests to leave affiliations at the door.

The act of preparing a meal is a powerful gateway to remembering the skill sets for collaboration: participation, empathy, flexibility, making and doing simultaneously, emergence, and individuality. At The Laurentia Project, we use cooking together to explore these skills because it is universal, nonthreatening, and tethered to home.

During the dough making, the conversation ranges widely, but periodically we bring it back to a planned topic, such as how to recognize and embrace the Anthropocene era in which we reside; the alignment of patience in consommé and community; the resilience of female armaments; or how the dismantling of national institutions might occur with productive empathy. They are topics, intrinsically connected to design, that require networked nourishment in order to be explored and to render action.

Another dinner participant takes a rolling pin to spread the dough into a sheet 1/32nd of an inch thick. That takes time, elbow grease, and courage, but if the sheet holds together, the reward is light-as-air ravioli. With time, each guest gravitates to a role. Mixing the pesto filling. Spooning it onto the sheet. Brushing on an egg mixture that acts like glue. Folding over the dough to envelop the pesto. Pressing out the air pockets. Or simply bearing witness to the organized madness.

As the guests relax into their tasks, food stories begin to emerge. For almost everyone, food is interwoven with memories that span our lives. Food is a timeless and universal way to connect and offers a catalytic mode of design workshopping.

Jennifer Young, an associate at Lake|Flato who attended one of our dinners, explains the difference. "Everything always feels so rushed," she says, about the conventional design process. Even when getting a large team together for a visioning charette, someone might be flying in and out on a tight schedule. Someone else has a hard stop at 4:00 PM. There's always a lot to cover, and agendas aren't necessarily aligned.

Young appreciates the evolution of dialogue that unfolds naturally in the space of a dinner: "There's a period of time when we're all cooking and making things and starting to understand the kinds of things we're

LEFT
Spaghetti Squash from *The Secret Lives of Fruits and Vegetables* series, 2015.
Photo: Maciek Jasik





going to talk about. By the time we sit down at the table, everyone's ready." For this article, we talked with Young almost a year after our dinner together, and her memories of the event were vibrant and resonant. To us, this reveals how the making of food-based design charettes generates values that endure in the day-to-day.

For dessert, we serve pie with whipped cream. We do it the slow, collective way, by passing around a mason jar half full with heavy cream. Guests take turns shaking, and when an arm tires, the jar is handed off. Everyone who wants one gets a turn or two. Then the jar goes around another time, with a spoon: perfect zero-carbon cream, ready for pie deployment.

In *Catching Fire: How Cooking Made Us Human* (2009), the British primatologist Richard Wrangham hypothesizes that cooking food was essential in our evolution. We are the only animals known to cook our food, and cooking vastly improves the efficiency with which we extract nutrition. Not only does that free up time from activities such as foraging and chewing, but also, Wrangham argues, it freed up energy that led us to evolve larger brains. If that hypothesis is right, we became thoughtfully human by cooking around a fire in small tribes. These would have been the same fires around which we built villages and the same gatherings where we designed and made tools, shared ideas, and planned our work as a community.

Our ancestral patterns haven't gone anywhere. Everyone still squeezes into the kitchen during a dinner party. And napkin sketches—hatched over a shared meal—remain the archetype of the germ of an idea. Design practice today, inclusive of cloud-based collaborations, screen sharing, and windowless conference rooms, has cleaved the sharing of food from the design of space. Instead of relegating food-based experiences to the margins, we suggest combining food ritual with design practice.

The importance of the connection between design and the making of food continues to surprise us. As an architect and a consultant who are both focused on sustainability, we recently facilitated a workshop for a firm that believed it wasn't living up to its sustainable design ideals. We expected to delve into the technical strategies required of a sustainable design practice, but the group led us someplace else.

When we asked the room of architects what aspect of their work got them out of bed in the morning, one after another spoke—each through a unique story—about the pleasures of engaging with the teams they work on. They also bemoaned the absence of routine collaboration in office cultures ruled by earbuds and lunch eaten alone at desks. A weekly shared lunch, on the other hand, was a celebrated firm practice and a bright note.

June Jo Lee is a Washington, DC–based food ethnographer who, among





FROM LEFT TO RIGHT
Participants in a Laurentia Project dinner workshop prepare ravioli from scratch. First, a well is formed from flour, then an egg is cracked into the center. When the well is stirred and collapses, it forms a loose dough. Photos: Tristan Roberts

other things, has studied the vanishing American lunch break and designed programs to get companies cooking together. She says that one of her goals is to teach *sohn mat*—in Korean, "the flavor in the fingertips" that's imparted by loved ones as they cook. "When you break bread [at the office], you're connecting people beyond functional roles—it's really about empathy" she says. "When you eat together, it transforms that relationship into a personal relationship. And suddenly, it infuses it with emotion and care. When you start caring, your capacity to care grows."

In the same way, creating a nourishing design process and designing buildings that people nourish are the same task. When we make and share the ravioli and connect it with the love that went into it, we are each more willing to engage authentically elsewhere: in community ethnographies, material choice, place-making, and building care.

The design profession is leaning on checklists to generate sustainability strategies and spending untold hours to document the work for third-party reviewers in order to demonstrate trustworthiness—instead of reappropriating that time to actually build trust. The paperwork process was necessary in the context from which it was developed, but the future of lasting design is not paperwork; it is community.

Cooking from scratch, collectively, is a risk and can be perceived as a waste of time. But the slow pace of the food is intentional and productive, as we are asking our guests to unfold and disarm. Shared meals have more lasting efficacy than any meeting agenda, goal-setting charette, or community workshop. This is because cooking together is inherently empathetic, loosens meaningful conversation, connects us to ancestral behavior, embeds and triggers memories, and resurfaces core values. These are unyielding foundations for a design team to engage and share. Making a slow dinner is simple, effective design.

As the dinner conversation wraps up over pie crumbs, coffee, and perhaps a little discovered sherry, the work has only begun. We have listened carefully, lightly facilitated, and witnessed new threads come up. The promise of shared meals that lead to action doesn't end when the kitchen is cleaned up. To us and, we believe, anyone engaging with food in this way, the layers of stories continue to evolve into better ways of meeting, connecting, and improving how and what we design. We also happily recognize that guests who come to dinner will take with them a part or the whole of the evening and transform it into something that is potent for their own individual process. That, too, is the intended outcome, however slow it may come. ■

SEASONS FINALE

THE DEVELOPMENT AND DECLINE OF THE FOUR SEASONS, THE HIGH TEMPLE OF RESTAURANT DESIGN

by Alex Beam

One associates the word *Gesamtkunstwerk*– "complete work of art"—with the wild, beautiful operas of Richard Wagner, which integrate music, theater, and imagery into spectacles that draw massive audiences a century and a half after their creation.

Could a restaurant be a Gesamtkunstwerk? One was: the Four Seasons, which opened in 1959, inside Ludwig Mies van der Rohe's famous Seagram Building in New York City. Its origin story is legendary. Liquor magnate Sam Bronfman, acting on the advice of his daughter Phyllis Lambert, hired Mies to design the company headquarters and wanted a restaurant for his tenants. "Mies didn't want do it," Lambert recalled in an interview. "Philip [Johnson, Mies' partner on Seagram] designed the interior with lighting designer Richard Kelly, who had studied theater at Yale and provided a kind of theatrical aspect to the rooms. Mies would never have done that."

In her 2012 book, *Building Seagram*, Lambert wrote: "With the Four Seasons, Philip achieved the ultimate Gesamtkunstwerk, in which theatrical interior effects are locked into reciprocity with Mies's structural language." No one disagrees with her.

Mies created the space, with his trademark clear-span architecture—not a column in view!—that afforded Johnson an unencumbered palette for his design. Johnson turned some of the architectural challenges into flights of imagination. For instance, the restaurant's entrance faced sideways, to 52nd Street, not forward to front onto the magnificent, granite-slabbed plaza Mies created on Park Avenue. Another oddity: The Four Seasons, and its satellite Grill Room, sat one floor above the entrance, because 52nd Street slopes downward east of Park Avenue.

From these exigencies, Johnson created famous solutions, for example an elegant "Miesian" staircase that lifted visitors up to a storied promenade. To decorate the hallway connecting the main dining area and the grill, Johnson installed a monumental, 19-foot-by-20-foot theater curtain, *Le Tricorne*, which Pablo Picasso had originally designed for Sergei Diaghilev's Ballets Russes. Alighting from the staircase, the visitor encountered yet another famous work of art, the sculpture floating above the Grill Room bar. The unnamed sculpture, and its nearby twin in the Grill Room mezzanine, form two suspended layers of 8,000 gilt brass rods hanging from narrow wires. They are beautiful but also functional, lowering the 20-foot-tall ceiling to a more human proportion.

Mark Rothko agreed to contribute an original work for the mezzanine space overlooking the dining area but backed out. He later told journalist John Fischer that he accepted the assignment "with strictly malicious intentions. I hoped to paint something that would ruin the appetite of every son of a bitch who ever eats in that room."

Mies' huge spaces presented a unique challenge, as Johnson explained to John Mariani and Alex von Bidder, authors of a 1999 book, *The Four Seasons: A History of America's Premier Restaurant*. "Right from the start, I knew that the space was much too big for a restaurant. So really, I was just trying to fill the space somehow, stay true to Mies's design for the building . . . There's a lot of wasted space, you know. But there is in a great cathedral, too, isn't there?"

David Hacin of Hacin + Associates in Boston first visited the Four Seasons



Philip Johnson, partner to Mies van der Rohe on New York City's Seagram Building and designer of the Four Seasons interior, in 1982, with the aluminum curtains by Marie Nichols in the background. Portrait by Neal Slavin



ABOVE
In 2016, an auction was held of the Four Seasons' contents. A set of four china ashtrays, 4 inches diameter × 0.5 inch, sold for $6,875.

BELOW
A pair of silver-soldered metal breadbaskets, 8.5 inches diameter × 4.5 inches high, designed by Garth and Ada Louise Huxtable, sold for $8,125.

when his father flew from their home in Switzerland to visit his college-age son. "It had this incredible processional," he recalls. "You arrived at the lower level and then experienced this sense of drama and process moving through that space that was unlike any restaurant I had been to before."

The main dining area is a boxy, open space—but here again, Johnson, working with interior designer William Pahlmann, devised a solution that centered the room and created an axis for the restaurant work to turn around. The designers installed a 20-foot-square white Carrara marble pool smack in the middle of the room. "Lighted softly from below and set at table level, a pool would have a soothing effect on the diners," Mariani and von Bidder wrote. A tree stood at each corner of the pool and changed foliage according to the season.

The celebration of the arts proceeded to the tables: Almost every object used by the customer or the service staff was custom-designed for the restaurant. Garth and Ada Louise Huxtable created the place settings, silver services, and the stemmed glassware, now in the permanent collection of the Museum of Modern Art. Johnson designed the restaurant's banquettes. He and Mies collaborated on the Grill Room's cantilevered barstools. Eero Saarinen designed the Tulip chairs and tables that found their way to the ladies' lounges, which an *Evergreen* magazine writer likened to "palaces" in a 1959 feature article.

The Four Seasons curtains, which shimmer down massive picture windows facing south, west, and north, are also a renowned work of art, designed by weaver Marie Nichols. "Made of aluminum, the [beaded] chains were in three colors: a sort of silver, a yellow gold, and a bronze rose-gold," former *New York Times* food critic Mimi Sheraton wrote in an official history of the space. "By day, they are transparent enough to afford a filmy view of the surrounding city and filter overly bright daylight. By night, when the windows go dark, the chain curtains become opaque, lending a reassuring enclosed look to the rooms."

The last, but not the least, of the arts proffered by the Four Seasons are the cuisine and the art of hospitality. Building owner Bronfman wasn't exactly a foodie. "All I want is to be able to get a good piece of flanken, OK?" was his famous comment to restaurant operator Jerome Brody. But Brody and his Swiss chef, Albert Stöckli, gave the world a lot more than short ribs. The Four Seasons pioneered the idea of seasonal menus featuring fresh foods. In his 1959 inaugural review, *New York Times* food critic Craig Claiborne singled out the fresh herbs and "several varieties of fresh mushrooms unknown in this country."

It did not go unnoticed that almost alone among top-drawer Manhattan eateries, the Four Seasons' menu was in English, not the customary, pretentious French. With meals priced for corporate expense accounts, the restaurant quickly became a "power lunch" venue almost before the term existed. John F. Kennedy celebrated his 45th birthday at the restaurant, before heading downtown to be serenaded by Marilyn Monroe at Madison Square Garden. The Dalai Lama, Henry Kissinger, and Mike Wallace, as well as innumerable bar mitzvah boys and teenagers clutching their admission letters from coveted schools, figured among the thousands of generally satisfied customers.





The tables were never placed cheek-by-jowl, so gossip columnist and restaurant regular Liz Smith couldn't hear Martha Stewart holding forth nearby.

The service, delivered by a professional waitstaff, not moonlighting actors, was old-school impeccable. "There is probably no dining establishment in New York where training for table service is more thorough," Claiborne wrote.

"We dined there on my 30th birthday," Hacin recalls, and they wheeled a corded telephone to my table on a rolling cart. My father was on the line; he had called to wish me happy birthday."

"I will never forget that moment," he says. "You think about how today everyone's checking their iPhones at the table. It reminds me how much fine dining has changed—and not for the better."

The inevitable change came to the Four Seasons, and brusquely. The Seagram Building's new owner, developer Aby Rosen, announced in 2015 that the restaurant's time "had passed," and he petitioned New York's Landmarks Preservation Commission to refurbish the space. The Commission rejected Rosen's proposals, which Lambert, in a *New York Times* op-ed, called "so severe . . . that it verges on dereliction of duty to decide in [Rosen's] favor." A peeved Rosen declined to renew the restaurant's lease.

In a dramatic gesture, the Four Seasons owners auctioned off the restaurant's entire contents in the summer of 2016 rather than re-create the decor at a planned new location a few blocks south on Park Avenue. (As of this writing, the new Four Seasons has not yet opened.) The frenzied bidding around the bubbling Carrara marble pool confounded all expectations. The first item offered, a bronze sign with the Four Seasons logo, was listed at $5,000 to $7,000; it went for $96,000. A Huxtable stemware service for 12 sold for $35,000. (Hacin bought a Huxtable-designed serving cart for $2,800.)

Wright auctioneers expected to gross $1.3 million from the sale. In the end, they took in more than $4 million.

The new operators have created two new restaurants in the old space, The Grill and The Pool, which look familiar to the old crowd because the Landmarks Preservation Commission insisted the Lippold sculptures and the Nichols curtains remain in place. The pool is still there, although the four trees at its corners have decamped. A gorgeous Emily Thompson blossom arrangement sits in the middle of the marble enclosure, but overall, there is more loss than gain. A recent weekday lunchtime visit revealed a dearth of A-listers, in fact, hardly any people at all. The Pool was practically deserted; The Grill had some customers. Staffers said business picks up at week's end and in the evenings.

"The Pool Is Not NYC's Next Great Seafood Restaurant," reads the headline of a piece written by a generally disapproving Eater New York reviewer, Ryan Sutton, last October. By contrast, Sutton liked its companion, The Grill, which he called "as close as you can get to a perfect New York restaurant." So perhaps there is hope for a second act—a Fifth Season?—after all. ■



ABOVE
Stemware by Garth and Ada Louise Huxtable of eight different forms including glasses for water, red wine, white wine, cocktails, martinis, champagne, brandy, and cordials; a service for 12 sold for $35,000.

All auction photos: Courtesy Wright

BELOW
Pablo Picasso's 19-foot-by-20-foot tapestry, *Le Tricorne*, graced the hallway between restaurant and grill. Gift of New York Landmarks Conservancy, courtesy of Vivendi
© 2015 Estate of Pablo Picasso/Artists Rights Society (ARS) New York

A SIMPLE GIFT

WITH THE ROUND BARN, THE SHAKERS CRAFTED AN AGRICULTURAL ARCHETYPE

by Jennifer Trainer Thompson

Circles were important to the Shakers—they danced in circles, worshipped in circles, even built a circular barn. When a round barn was constructed in 1826, the idea was so controversial that the entire community had to vote on it. And yet the form has endured, a beloved symbol of beauty and efficiency, with several hundred examples still in existence.

Arguably the most magnificent building that the Shakers of Hancock, Massachusetts, ever erected, the Round Stone Barn is the first and only Shaker barn of its kind. With all its limestone quarried on the property, its circular design was a model of efficiency and a curiosity to both the Shakers and "the world's people," as outsiders were called, including farmers and progressive neighbors such as Nathaniel Hawthorne and Herman Melville, who staged a footrace inside the structure in 1851. The elegant beauty of its simple form and detailing typifies Shaker design, which remains a lasting legacy today.

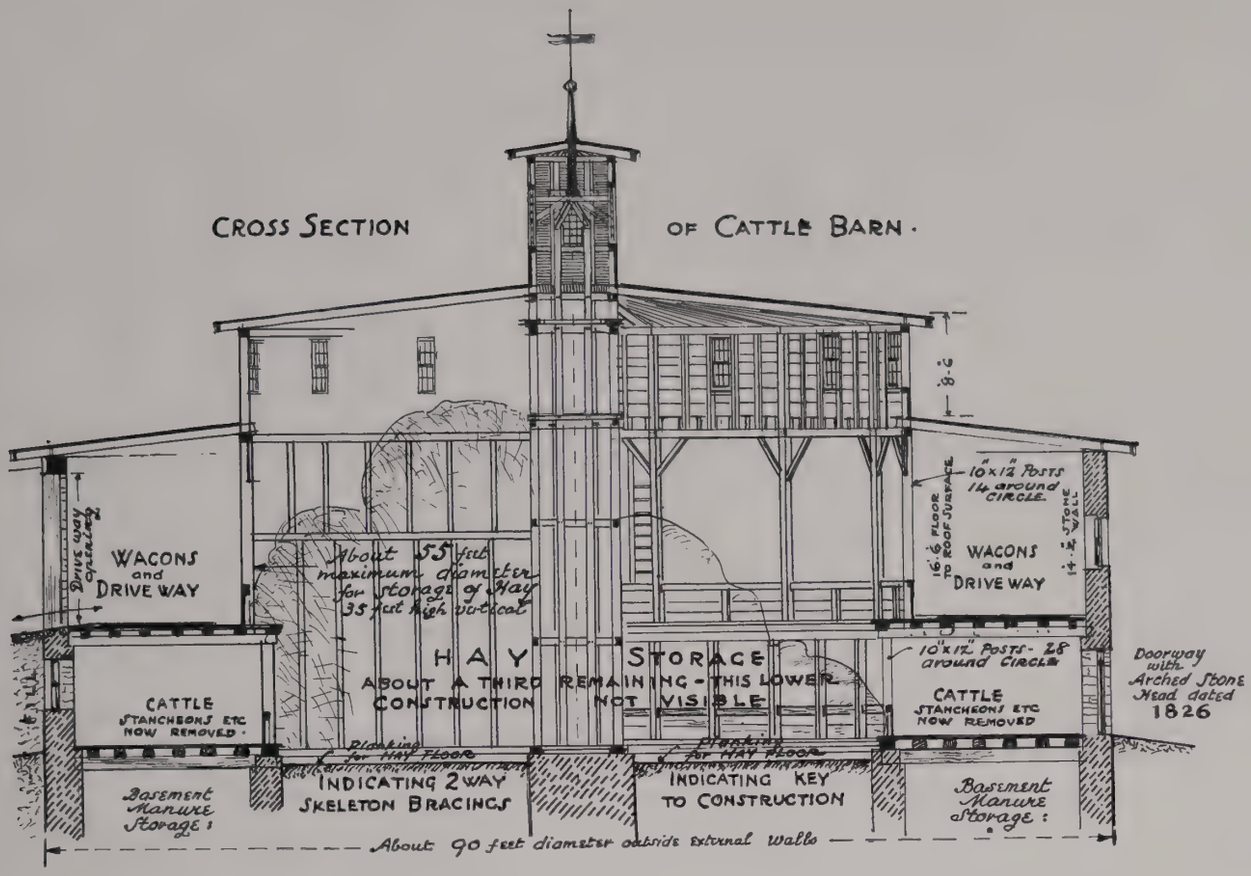
Originally stabling 52 dairy cows, the barn was rebuilt after a devastating early-morning fire on December 1, 1864. It burned so hot that some portions of the stone were converted into lime. Within a week, the Shakers came to believe that it was the work of an arsonist. The loss of the barn, adjoining sheds, 100 tons of hay, eight bushels of provender, and six wagons contained within was estimated to amount to $10,000, a tremendous financial blow to the community.

Improvements completed in 1870 included a flat monitor roof and cupola, a manure pit, and a clerestory level below the cupola, providing increased light and ventilation. Called a "banked barn" (because it is built into a hillside), it offers ground-level access on all three levels and a circular route—critical when you're driving a large carriage with a team of horses inside and backing up can be calamitous. The upper-level balcony, spanning 75 feet in diameter, was used to unload hay; the central level, to store hay and house and feed cattle; and the lower level, to store manure until it could be transported to the gardens and used as fertilizer. Gravity assisted the work.

The 1826 Shaker barn received loads of publicity, but the design didn't become popular until the turn of the century. By 1900, some agricultural colleges in the Midwest, particularly Illinois, pushed the design as they taught progressive farming methods based on industrial efficiency; the interior layout, for example, allowed farmers to work in a continuous direction. In the days before mechanization, labor-saving devices were a big seller.

The circular shape also allowed 360-degree ventilation and light. They were





cheaper to construct than square or rectangular barns because they required less material. Round barns at the University of Illinois, in particular, increased the style's popularity, as the university's Agricultural Experiment Station started publishing regular bulletins touting round barns in the *Illinois Agriculturalist*.

The "Octagonal Era" stretched from about 1850 until 1900, and the fad spread to California later in the 19th century. There are about 20 surviving historic round barns in Canada and several hundred surviving in the United States—Hancock Shaker Village's being the first one built in America.

Thought by the Greeks to be a symbol of balance in nature, the circle is a powerful shape, and Hancock's (which is on the National Historic Register) consists of four large rings. The innermost ring is used for ventilation, to draw the moisture up and out of the hay, which prevents mold from growing and the hay from spontaneously combusting. Hay was stored in the second ring. And on third ring, the Shaker brothers would walk (and probably sing) to distribute the hay from the second ring to the cows.

In the fourth ring, 50 or more cattle were kept in wooden stanchions, which radiated outward from a central manger. The cows stabled on the main floor faced inward toward the haymow for ease of feeding. Standing there, the cows could eat while the brothers milked them. The floor of the outermost ring is split level, with the inner part raised up 3 inches. This was to prevent the milk buckets from being on the same level as the unsanitary manure. The Shakers also developed a way of both efficiently removing the manure from the complex and using it for compost. Approximately every 4 feet around the outermost ring, there was a trapdoor that was used to quickly scoop the manure on the floor into the cellar beneath the barn. The storage area was accessible by wagon in order to transport the manure to the gardens.

The original barn, with its tall, conical roof, provided ample overhead space for men and animals, but the Shakers found that the central part over the hay wasn't high enough. So they fixed it: They raised the roof (60 feet in diameter) over the hay and built a loft under the roof, which allowed them to put in windows all around the circle and light the barn almost in every part. In 1883 the round barn was "finished to perfection," according to one Shaker, when they built a root cellar on the same level as the cattle.

The sect maintained a working dairy farm at Hancock into the 1950s, when the handful of remaining Shakers decided they needed to consolidate elsewhere, unable to run the vast property. The settlement became a museum in 1960. In 1968, Hancock Shaker Village dismantled the masonry walls stone by stone and shored up the foundations—leaving the timber frame structure intact. Once a new foundation was laid, the masonry walls were rebuilt using the original stones. In 2008, paint analysis revealed that the exterior woodwork of the barn was painted yellow when the Shaker reconstructed it after the 1864 fire, and in 2009 the paint was restored to its original color.

The Shakers called their village the City of Peace and created an inspirational way of living with integrity while cultivating values of pacifism, racial and gender equality, and sustainability. The barn stands as a beacon to their legacy of exquisite design and agricultural innovation. "There's as much reverence in pulling an onion as there is in singing hallelujah," said one Shaker, and they did a lot of both. ■

ABOVE AND LEFT
The building plan (above) details the cross-section of the Shaker Round Stone Barn, built in 1826. In 1968, its masonry walls were rebuilt with original stones (left). Photo: Clem Moore

3 COURSES

HERE'S THE DISH ON THE DINING EXPERIENCE



ASPIRE

by Eric Aulenback

Restaurant design is about laying a foundation where hospitality and guest satisfaction can flourish. The foundation begins with the floor plan, the blueprint that will define the future of the restaurant. The layout dictates the seat count, capacity, and ultimately the revenue potential. We often lay out the design on the actual floor and assess sightlines from every seat and how staff and guests might flow from point A to point B.

Then we look for ways to enhance guests' experiences. "Bridging"—building chameleon-like spaces that bridge the dining and social needs of the neighborhood community, all day and evening—is paramount. Interiors want to be authentic, like a home where comfort reigns above all else. Our design method is about the fusion of a dining experience with a social experience.

At Capo Restaurant and Supper Club in South Boston, the floor plan is based on creating varied experiences within larger spaces. The goal is to give neighbors a comfortable front room that looks like an Old World Italian tavern: an open store front with mahogany bi-folding doors, a bar area with high-top and booth seating made with 200-year-old reclaimed pine, antique ceiling fans and ambient globe lighting that line wood-clad ceilings. Every finish in the back room is different from the front. Open kitchens and flexible low-seating options serve primarily as our dining room but can morph to accommodate events and private dining. The experience is designed to be a bit brighter, more culinary, more focused on the kitchen and food.

The look and feel of a restaurant communicates with guests on a subconscious level, which affects how and when they integrate the venue into their daily lives. We use a wall-mounted display and cutting station to highlight artisanal bread and prominently displayed wine, which help communicate intimate meals shared with friends and family. The juxtaposition of spinning ceiling fans, the energy of the servers, the crackling fire, the dance of food preparation, and the wood-fired oven form a symphony of movement that, along with a curated soundtrack, creates theater where diners become the stars of the show. The goal: to make our neighborhood restaurants feel like a favorite pair of jeans, the ones you keep coming back to and want to wear every day. ■

LEFT
A meal inspired by Salvador Dalí from the *Artisan Brunch* series, 2017.

Photo: Aaron Tilley for *Kinfolk* magazine
Set design: Kyle Bean
Food styling: Lucy-Ruth Hathaway



DESIGN

by Cheryl and Jeffrey Katz

We're passionate about design and work on all kinds of projects. We're also passionate about food, so designing restaurants is perhaps the most fun work of all.

Our restaurant clients usually come to us with a clear menu concept and a strong idea about the style of service. Whether it's fine dining or a dive bar, we start by looking at precedents. Usually this is an image search, but one lucky time, when we were beginning the design of Sarma in Somerville, it meant a long weekend in Istanbul. Before beginning the design for Menton in Boston, we ate at the finest restaurants in Providence, Rhode Island; New York; Chicago; and Yountville, California. Whether it's armchair travel or the real thing, we embark on a search to establish, and to communicate to our clients, the tone of the restaurant. All decisions emanate from there.

Next, we tackle the host building to understand what it has to offer—materials, structure, history, light. Sometimes the space offers a lot. At Drink in Fort Point, the character of the bar was more or less determined by the existing space. At South Boston's Fat Baby, we "constructed" a history using distressed wood and patinated metal. Low ceilings and thick walls allowed No. 9 Park on Beacon Hill to feel intimate, while Fóumami, located at the base of a downtown office tower with huge walls of glass, allowed us to create an airy, open space.

Finally we consider what we call the choreography. We "thin slice" the diners' experience and design each part of it: the approach from the street, the front door, the greeting and reception area, the approach to a table, the access to finding a seat at the bar. By considering each part of the sequence in detail, we aim to make the whole encounter as seamless and effortless as possible. We try to design spaces that support the experience without overpowering it. If the lighting, acoustics, look, and overall character all add up to an atmosphere that supports the food and the service, we've got a success.

And then, hopefully, we end up on the VIP list. That's when the real fun begins. ■

ABOVE
Scala from *Tradizione, Costruzione* ("Tradition, Construction"), 2013.

Photo: Aaron Tilley for *The Gourmand*
Set design: Gemma Tickle

ENJOY

by Alison Arnett

In his short story, "A Clean, Well-Lighted Place," Hemingway succinctly outlines a restaurant's appeal. The old man sits drinking as two waiters argue, one wishing to go home, the other pointing out why the man lingers: The light is warm, the place clean, and the brandy welcoming, and leafy shadows on the terrace offer a distraction. That's a good, bare-bones analysis of what I hope for when I walk into a restaurant—clean lines, natural light if possible, or at least warm lighting, and attractive details to beguile me.

Here's my ideal: I walk into Restaurant Perfect and approach the hostess desk. It's strategically placed but doesn't block the scene so that I immediately get a sense of the room. As I move toward the table, I appreciate the natural materials, distinctive paint colors, a floor surface that is safe to walk across, even in heels. The attractive upholstery, while aesthetically pleasing, also muffles sound. The tables are close enough to foster a sense of community, but not claustrophobically so.

Settling in to my seat, designed for comfort, I notice conviviality: discreet music, the sounds of conversation, the faint clink of glasses and cutlery, but not a thunderous roar of bass tones or raucous hoots. Lighting is indirect but strong enough for diners to read menus without flashlights. The decor is not cluttered, but there are well-thought-out details that distinguish this restaurant in a time of ubiquitous industrial chic. Most important, there's a focus: An exterior view is great but often not possible. Instead, a partly open kitchen, some greenery, or a dramatic spot of art commands the view.

And finally, the freestanding bar has ample seating but enough surrounding space so that bar diners are not looming over those sitting at tables. That is the architectural dilemma for restaurant designers right now: how to integrate lucrative bar seating with tables so that the room doesn't look chopped up and each set of diners is comfortable. In fact, at Restaurant Perfect, it works so well that that's where I'll sit next time. Hemingway would certainly have approved. ■



LEFT
A meal inspired by Yayoi Kusama from the *Artisan Brunch* series, 2017.

Photo: Aaron Tilley for *Kinfolk* magazine
Set design: Kyle Bean
Food styling: Lucy-Ruth Hathaway

EDIBLE COMPLEX





When most people hear the word *geometry*, they think math. But for 28-year-old Dinara Kasko, it equals mouthwatering landscapes of meringue, mousse, mascarpone, and cake enrobed in triangulations of chocolate or spheres of fruit glaze. Born in the Ukraine, Kasko studied and practiced architecture before changing course, opting to fuse her love of pastry making with skills gleaned after working as a designer for three years in the Netherlands. Her confections thrill the eye with their geometric compositions, realized with 3-D-modeling technology, silicon molds, and the occasional feat of engineering. If Kasko has a muse, it might be Marie-Antoine Carême (1784–1833), the architect of French haute cuisine. "Most noble of all the arts is architecture," the chef and pâtissier once said, "and its greatest manifestation is the art of the pastry chef"—words that Kasko appears to have taken to heart. —Fiona Luis

GEOMETRICAL KINETIC TARTS

Streusel, almond sponge cake, blackberry-blueberry confit, mousse with mascarpone and blueberry, white chocolate

A collaboration of three artists—sculptor, engineer, and pastry chef—this tart was made for *So Good*, a Spanish pastry magazine. Kasko transformed Miami artist José Margulis' plastic, aluminum, and acrylic 3-D drawings into a continuum of edible layers. A friend with a milling machine helped cut out slices from many sheets of white chocolate. Kasko assembled the pieces and then placed the composition on top of the berry tart.

THE BUBBLES WITH EXOTIC FRUIT

Mango and guava confits, ladyfinger sponge cake, crunchy layer, white chocolate mousse with meringue and lemon, neutral glaze

After this cake appeared on the cover of *So Good*, the Italian company SilikoMart put the mold into mass production. Kasko used biomimicry—in this case, of the form that bubbles make—combined with 3ds Max modeling software and a 3-D printer to cast the silicone mold. To finish the dessert, she covered the bubbles in a thin layer of glaze applied with a spray gun.





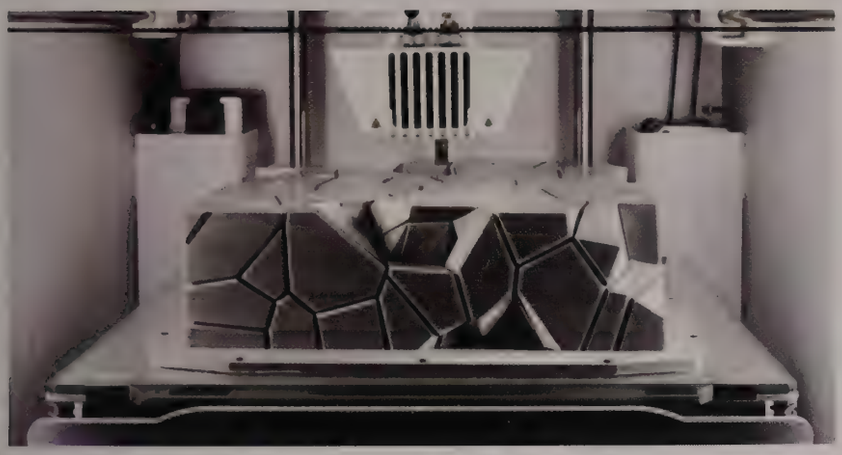


ANTIPAVLOVA CAKE

Meringue, mousse with mascarpone, shortcrust, mango, strawberry, and raspberry powder

The classic Pavlova is an airy, meringue-based confection with a crisp shell, traditionally decorated with a topping of whipped cream and fresh fruit. Kasko calls this interpretation—with its cream and fruit elements inside the spiky meringue armor—one of her favorite cakes.





CLUSTER CAKE

Chocolate mousse, raspberry and black currant confits, chocolate sponge cake, shortcrust, and chocolate spray

Kasko worked with parametric designer Andrej Pavlov to partition a plane into several fragments, using a Voronoi diagram to create the mold. The finished cake does not look like a whole object, she says, but like it consists of items not necessarily connected to one another.



ALGORITHMIC MODELING CAKES

Mousse with ruby chocolate and meringue, berry confit, biscuit, raspberries, ruby ganache, and a crisp chocolate layer

When Kasko was invited to Shanghai in 2017 to participate in a presentation of a new, naturally pink, fruit-flavored chocolate variety made from the ruby cocoa bean, she wanted to develop a form that would emphasize its bright, unusual taste. Her approach was to create a set of 81 individual cakes—each one unique in shape—that together would form a single composition. Kasko was inspired by the artist Matt Shlian, who engineers pieces from folded paper, to use a pyramid, altering the tilt of each object and the area of each top plane.

GEOMETRIC DESSERTS

Chocolate sponge cake, streusel with nuts, mousse with Valrhona Caramelia chocolate, ganache with Caramelia and yuzu, jelly with yuzu and passion fruit

The cake, which is filled with mousse and jelly, has a surface that resembles concrete. Kasko modeled six molds to convey sharp lines and a seemingly inedible appearance. From left to right, the first row shows Figures #4, #5, and #2. The second row shows three different angles of Figure #1. The third row shows Figure #3 followed by Figure #6, first whole and then sliced open to reveal its delicious interior.





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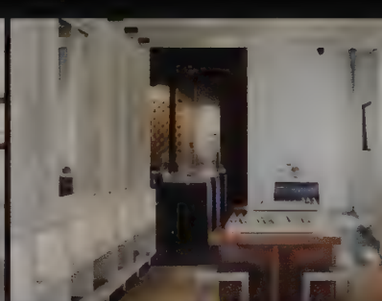
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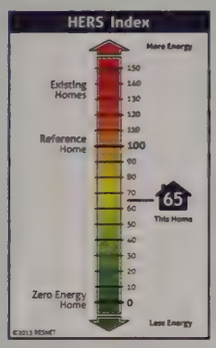
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6:00 – 8:00 pm
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PANELISTS:
Elizabeth Christoforetti
Chris Grimley
Gregory Minott AIA
principal, DREAM Collaborative
Leena Nutt
David Sabedra
co-founder and design director, MASS Design Group

SESSION CHAIRS:
Gabriela Baierle AIA, Jeffrey Buchanan AIA, Kelenitz Fretzin

STUFF

What are we making? Why are we making it?

Thursday, May 24
6:00 – 8:00 pm
BSA Space
290 Congress Street
Boston

PANELISTS:
Katherine Faulkner AIA
principal, NADAAA
Vinicius Gorgati AIA
principal, Sasaki
Nathan King
research strategist, Autodesk BUILD Space
Maryann Thompson FAIA
founder and principal, Maryann Thompson Architects
Yasmin Vobis
principal, Ultramberame

SESSION CHAIRS:
Natasha Espada AIA & Andie Francis AIA

TURF

Where do we work? How do we work?

Thursday, June 14
6:00 – 8:00 pm
BSA Space
290 Congress Street
Boston

PANELISTS:
Mark Doughty
general manager, Thoughtforms
Shauna Gillies-Smith ASLA
founding principal, Ground
Stephanie Horowitz AIA
managing director, ZeroEnergy Design
Daniel St. Clair
managing director, Spaulding & Slye Investments
Carole Wedge FAIA
president, Shepley Bulfinch

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Christine Dunn AIA & David Gamble AIA

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BOOKS



Mobitecture: Architecture on the Move
Rebecca Roke
Phaidon, 2017
Reviewed by Aeron Hodges AIA

My friend Addison lives in the woods most of the year. He builds tiny cabins on wheels for wary urban dwellers looking to reconnect with nature. One of the first he built is called Ovida, a sleekly designed room similar to the size of a van that provides all the modern accommodations you might expect from a hotel room.

Ovida is one of the 250 projects author Rebecca Roke features in *Mobitecture*, which documents a collection of movable dwellings and installations organized by how they are transported. These objects range from the most nimble structures to those that need various numbers of wheels. A delightful book, it sparks the imagination with case studies of mobile objects that can be made to provide shelter, activate public spaces, and make artistic statements.

A typical project is displayed on one palm-sized page, its story told with an exterior photo and a paragraph of text. With succinct, well researched content as well as a quirky writing style, Roke takes the reader on a journey packed with unexpected inventions—such as tents that fold into stylish coats and cargo vehicles powered by two cyclists.

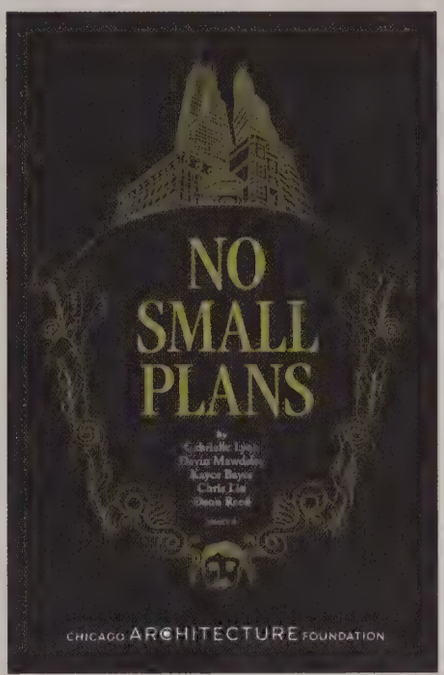
Many set out to solve serious and widespread problems. *U-Dome* by World Shelters is a practical, lightweight dome structure made with durable and waterproof materials ready to be deployed in refugee zones. *Warka Water 01* is a cylindrical bamboo-supported mesh structure that captures water condensation in Ethiopian deserts to support irrigation and provide drinking water. *I-H Cruiser* by artist Winfried Baumann is a dignified portable homeless shelter made with sturdy aluminum framing and a quilted thermo cover.

A large subset of the selected projects are more lighthearted yet effective when deployed to activate public spaces. *Parkcycle Swarm* by Dutch design group N55 is a collection of lawn spaces integrated with tricycles that, when transported, can transform any asphalt parking lot into a backyard party. *Caterpillar* by Lambert Kamps is a film theater in the form of a long vaulted ceiling; when inflated, the puffy shape resembles a cartoonlike caterpillar.

The book demonstrates that mobile architecture can be built with a wide range of materials and structurally supported and transported using the most bizarre methods imaginable. Although it fails to delve into theoretical aspects or explore digital fabrication technologies and craftsmanship, it successfully illustrates the strength of mobile design. The sheer variety and exuberance of the featured projects strike an optimistic tone for this unconventional architectural typology, with its ability to improve people's living experience via increased flexibility and lower costs. As Roke points out, the impetus for mobile architecture stems from the challenges of our time: "Cities are becoming increasingly crowded, and every alley and rooftop is under greater pressure to perform with maximum effect...many of the projects are a direct effort to alleviate this tension."

Since Ovida, Addison has built 75 more mobile cabins, creating a fleet of little vacation caravans that are often occupied throughout the year. His story, together with all the other examples included in *Mobitecture*, is evidence of the immense possibilities of agile design thinking and the excitement generated by architecture on the move.

AERON HODGES AIA designs urban housing at Stantec and is cofounder of WHAT'S IN, a research initiative looking to solve housing affordability using compact urban living designs.



No Small Plans
Gabrielle Lyon et al.
Chicago Architecture Foundation, 2017
Reviewed by Peter Kuttner FAIA

I have to state right up front that everything about *No Small Plans* is both a surprise and a delight. As a fan of graphic novels, I was more than pleased to discover the existence of one packed with architecture, framing an intriguing introduction to community-based urban planning, in such a beautifully drafted book.

I was subsequently impressed to find it was a product of the Chicago Architecture Foundation (CAF), working with the Chicago public schools and the public

library, to celebrate the foundation's 50th anniversary. It's the architectural foundation to aspire to, and this book and its ambitions raised CAF's stature another notch for me.

Realizing this book was about Chicago (where I attended suburban grade school), it dawned on me that the title might be paraphrasing Daniel Burnham's admonition: "Make no little plans; they have no magic to stir men's blood...make big plans; aim high in hope and work...." In fact, it's much more than merely a reference. After Burnham's 1909 *Plan of Chicago* was released, an avid supporter named Charles Wacker, then chairman of the Chicago Plan Commission, enlisted Walter Moody to publish *Wacker's Manual of the Plan of Chicago*. This 1911 booklet, popularly known as *Wacker's Manual*, was used as a textbook in schools throughout the city to enlighten children about the importance of planning and that they had a stake in planning for their future.

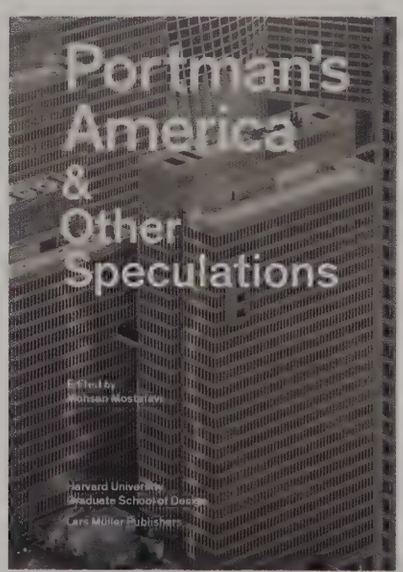
The historic precedent and focus on planning enrich this project, but it wouldn't be enough without a great story and terrific illustrations by a team of young Chicago artists. The novel follows various students from different neighborhoods who explore the city and its urban issues in three chapters. The breakthrough idea: The stories take place in 1928, 2017, and 2211. Looking at Chicago through the eyes of these young people—rooted in the past, present, and future—is a fascinating glimpse into issues that change over time, those that persevere, and the role everyone can play in planning for their city.

In 1928, Reggie, Elisa, and Bernard escape their neighborhoods and the racial, ethnic, and economic factors that limit them. They head out to explore downtown, making their way to the era's new symbol of infrastructure prowess, the Michigan Avenue Bridge. In the 2017 chapter, Jesse, David, and Christina study planning in school, but it's only when their friend Natalie is being evicted that they begin to see the impact of unplanned development. They quickly learn to organize and resist. By 2211, virtually connected kids Gabriela, Codex, Octavius, Tsang, and Rafael are selected for the City Planning Council on Civic Assignment Day. They cautiously step into the real world to meet one another and the real Chicago, to make tough development decisions.

What the CAF calls a "Burnham Interlude" punctuates the end of each chapter: There is a map of the city for that time frame, and Burnham himself takes a moment to talk about his vision of planning and what it means.

After the foundation launched a Kickstarter campaign last year, it took only 10 days to reach its goal of $20,000, and the CAF eventually raised $65,000—enough to distribute 5,000 free copies to students. There's a "Reader's Guide," "Media Kit," and "No Small Plans Toolkit" for schools. The book has room for notes. You can buy it at the CAF online store. Get two, and give one to a student.

PETER KUTTNER FAIA is a principal at Cambridge Seven Associates and a member of the BSA Foundation board.



Portman's America & Other Speculations
Edited by Mohsen Mostafavi
Lars Müller Publishers, 2017
Reviewed by Chris Grimley

We've all been there, in one form or another. Their presence in cities, gleaming like silver screens. Their vision on the screen, being exploded during heists. They reappear in books, standing in silent guilt, accused of refusing to engage with the surroundings they land in, only to be considered a hermetic nonspace, elevator-gazing spectacle. How do we ignore their megastructural lack of connection with the urban, coming at a time when cities were desperate to find reinvention through architecture? What do we do, then, with this slim volume of an interview, essays, (and mostly) photos that appeared almost simultaneously with the architect's death? It's a strange—and narcissistic—production, a floating menagerie of guests and cleaners, meeting passively in the rotating restaurant while the chaos of the "real" world bustles around them.

So what do we have in *Portman's America*? An introduction; a sprawling interview in a sparkling house; the hagiography of oral histories, amusing and subjective; textual interventions; and studio work. But the singular vision of John Portman's Southern hospitality forms the center of this book. The houses—of which there are two, both too large to imagine—tiptoe the line between the exquisite and the exuberant. Decadent in ways you might imagine if you exploded the compressive tendencies of Frank Lloyd Wright, whose presence echoes in the integration of landscape, both real and imagined.

The photos unfold at a rapid pace, tracing the easy seduction of repetition, as they take up more than 200 pages. Even though they're by the preeminent architectural photographer Iwan Baan, they swipe by you at a pace that is consumed in rapid-fire simulacra. They are wonderfully composed—all swooping lines, reflective surfaces, glossy. Some specific scenes: in Atlanta, the relentless aggregated splendor of Peachtree Center's surfaces; The Regency's regal purple carpet not looking a day older than when that *other* photographer monumentalized it in 1996; the anthropomorphic ribs of the Marriott Marquis, threatening in their embrace; in Detroit,

the alienating presence of the Renaissance Center, dropped along the light string of a closed-loop people mover, a vision of the future still struggling to appear; in San Francisco, the Embarcadero Center, a longtime favorite for this concrete fetishist; and in Los Angeles, the Bonaventure—oh the Bonaventure—embedded on the retina, gleaming and reflective on the page, remembrances from screens and calls of "Action!", an easily beautiful contradiction, a symbol of everything that is right, and wrong, with itself and architecture.

Portman's unexpected, smaller buildings for campuses have a lighter presence, where the reduction of the monumental seems to distill the radical gesture to a much more empathetic nuance. The Atlanta Decorative Arts Center, the only building presented without a plan or section, is a seeming oasis of cascading greens in empty white space, and a student center delivers the right scene in which to be seen.

All this work has been the subject of much (rightfully) speculative derision, in which the decisions of the architect seem to abdicate responsibility to the larger issues of the cities in which the works appear. But are we being too reactionary? Portman himself contributes only a short exposition on the nature of his work: "Architecture is not about preconceptions, it is about understanding relationship and context. A city is rarely built all at once. One building goes up, and another, then others, and the city evolves in an organic fashion."

This is an architecture of travel, of the in-between, of late arrivals, and departures. The appearance of Jennifer Bonner's essay, "Nine Persuasions Towards Architectural Pizzazz" frames a different take—that of the native, of growing up within, and a departure from voyeuristic interpretation. I'll let her have the last words: "If the debate between 'less is more' and 'less is a bore' is still alive (and the stark differences among camps in contemporary architecture tell us it is), then architectural pizzazz is more closely aligned with the latter, since Portman's architecture radiates with charm, oomph, and allure."

CHRIS GRIMLEY is a principal at the Boston-based interdisciplinary practice over,under.



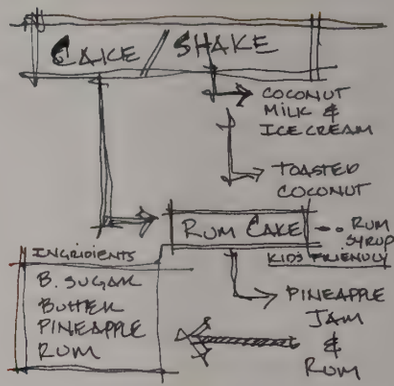
SWEET MEMORY

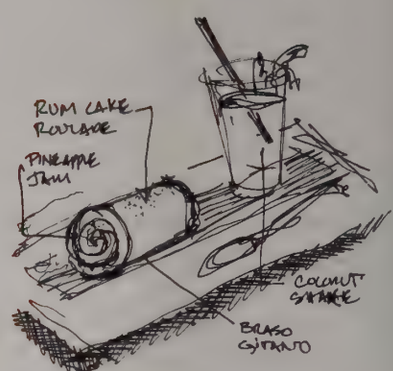
When I studied architecture at MIT and then began to put my education into practice, the design process became a discipline for me. Today, as a professor and chef, design continues to be a vital part of my daily life, and that process is one in which my twin passions—food and architecture—run a parallel line.

The dessert illustrated here outlines the design process for the creation of a new menu item for my restaurant. It started with a memory: drinking a piña colada at the beach in Puerto Rico. The deconstruction of the piña colada ingredients and the tropical setting generate the schematic ideas for the dessert, La Playa. Eventually, I settle on one idea: rum cake and a coconut shake. During the design development phase, conceptual options are generated regarding the form and integrity of the cake: as a layer, as a roulade, or as a container. At this stage, the concepts of color, texture, materiality, and proportions are introduced and details drawn. Then the dish is cooked, the parts assembled, and La Playa is ready to enjoy. ¡Buen provecho! ■

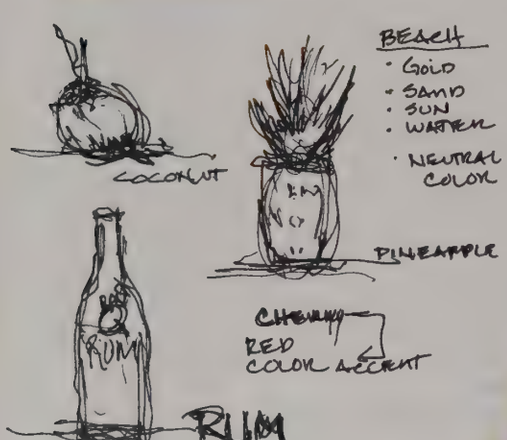
ALBERTO J. CABRÉ is an architect and chef/owner of Casa B restaurant in Somerville, Massachusetts.

DESIGN DEVELOPMENT

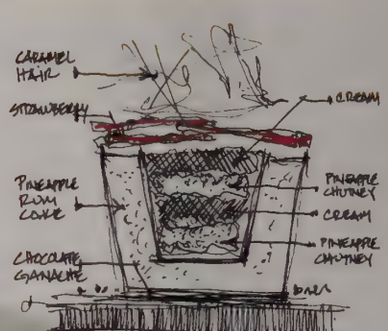




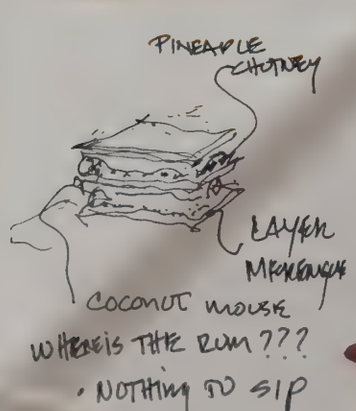
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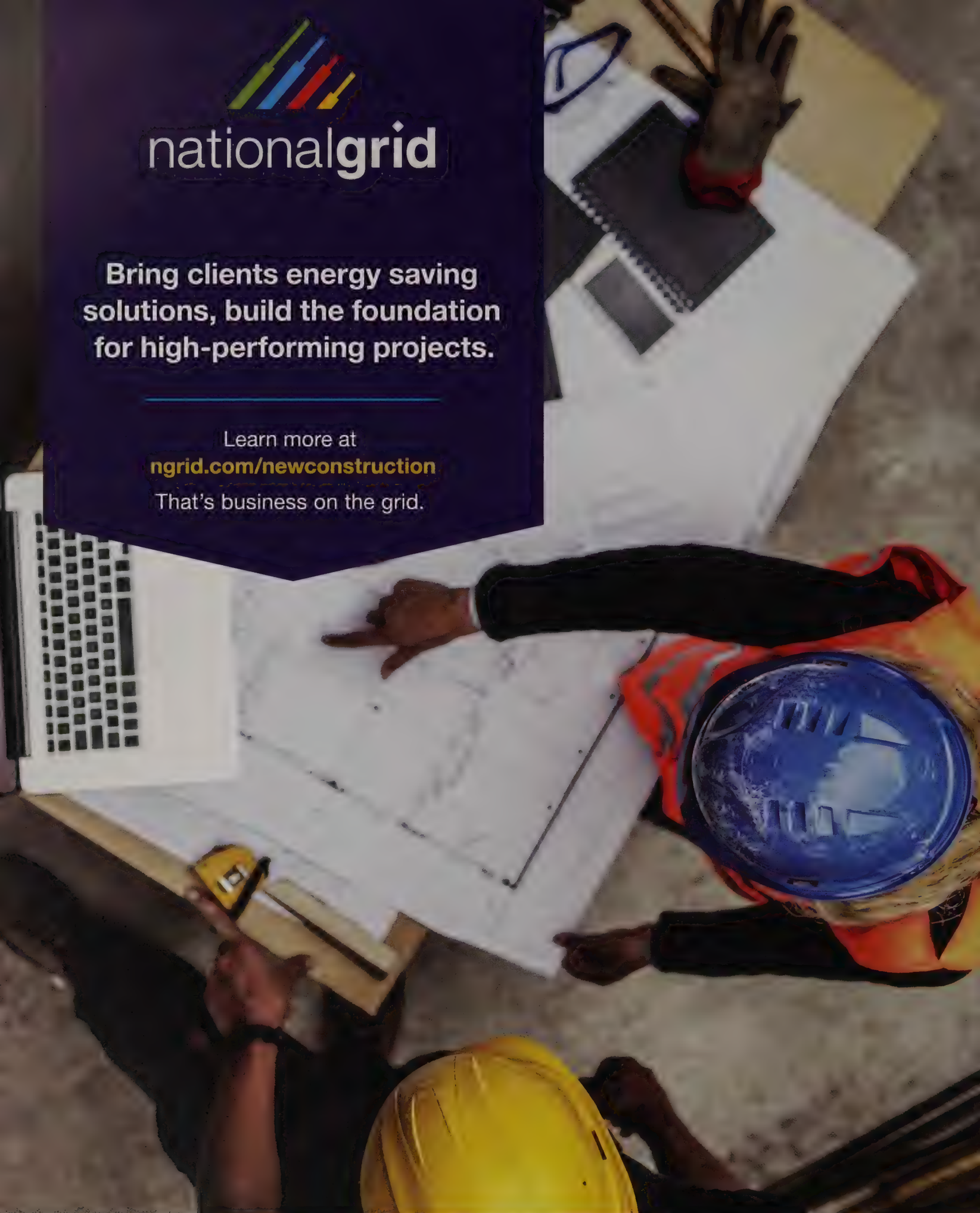
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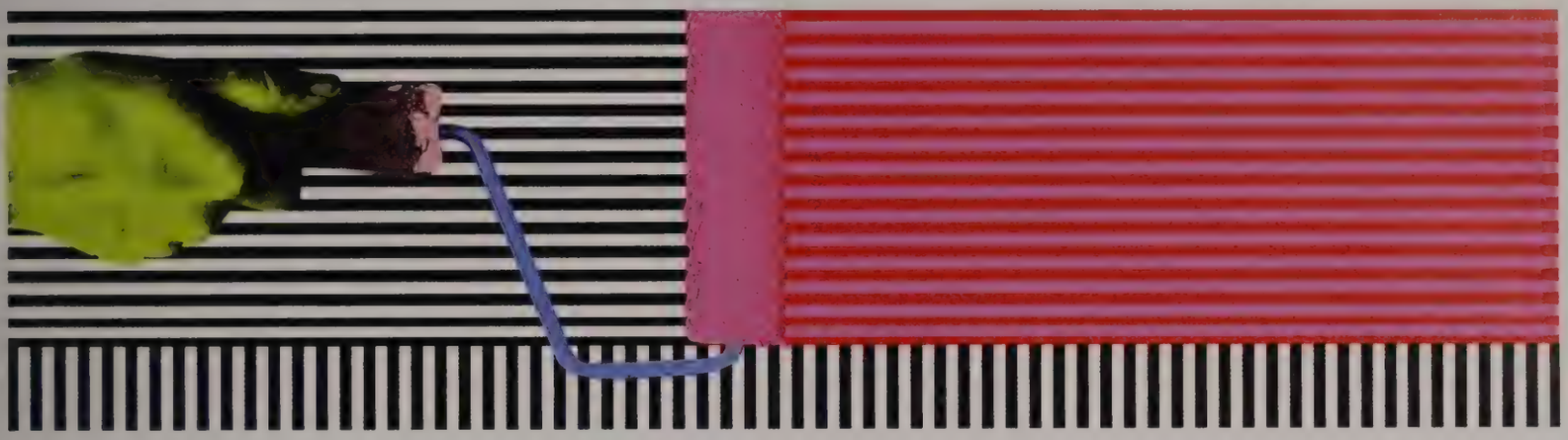
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Ethics

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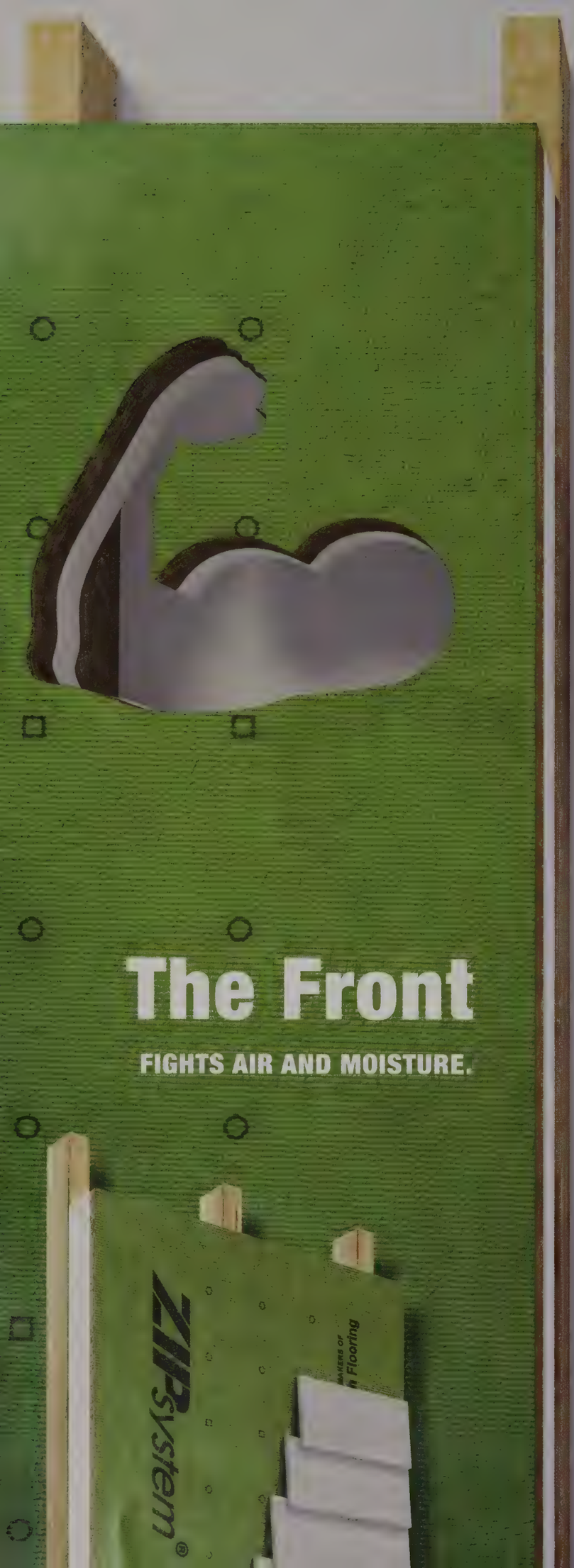
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COVER
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FOR GOOD MEASURE

Despite what we learned in Sunday school, our moral code is not etched on a stone tablet. It evolves with changing seasons and circumstances, a living set of precepts that, one hopes, grows ever more generous with time. It was once considered perfectly ethical for the vote to be granted only to white men holding property, for example, or for people of different races to be barred from marriage, or for married women to be unable to get a credit card or mortgage in their own names. It's only through brave individuals questioning the orthodoxies of what is "right" and "proper" that we progress as a people.

So, too, with the ethics of architecture. In what may come as a revelation to younger designers, Jay Wickersham FAIA reminds us on page 26 that it wasn't until the tumultuous 1970s that notions of professional ethics broadened beyond strictly fiduciary interests to embrace societal values such as environmental stewardship or protecting human rights. This issue of *ArchitectureBoston* examines the many shifting facets of ethical practice, from Whitney Young's 50-year-old call to diversify the design field to a ripped-from-the-headlines discussion of sexual harassment at the highest levels of the profession.

The American Institute of Architects has been racing to catch up with this new landscape. At press time, the AIA membership had adopted a resolution introduced by Frances Halsband FAIA to amend its Code of Ethics to explicitly ban all forms of sexual harassment in member firms and to promote pay equity and workplace dignity for all employees—concepts that would have been beyond the ken of earlier generations. Still, the resolution will not take effect unless it is ratified by the AIA board of directors, which was expected to take up the question at its September meeting.

Licensed architects take a solemn vow to protect "the health, safety, and welfare of the public." But is that enough? What is the responsibility of architects to contracted workers, to a fragile planet, to the tender ego of a vulnerable student? What of the client who wants to rip up the cultural and aesthetic traditions of a place to impose his own kitschy vision—and is willing to pay handsomely to do it?

As architects consider expansive new rules of conduct for themselves and their peers, it's good to be mindful of the dangers of hubris. The Utopians, after all, weren't so much creating an ideal society as pushing their concept of one upon the masses. The meticulously planned cities of Le Corbusier and Frank Lloyd Wright, the manufactured Florida communities of Disney's EPCOT and Seaside, the massive zombie cities built for no one in China mostly look like soulless grandiosities now, indifferent to the real needs of humans who would live in them. It's sometimes hard to locate the line between idealism and tyranny.

The ancients knew this. Socrates, who graces the cover of this issue, believed in active engagement, not private contemplation, as the best path to knowledge, and the justice he believed would naturally flow from it. He famously prowled the Athens agora, or marketplace, to investigate the Big Questions—Does might make right? Is virtue necessary for happiness?—with the people themselves. That his inquiry eventually led to a heresy conviction at the hands of the authorities doesn't diminish its worth.

We need to keep talking to one another, to wade into the marketplace of ideas, to engage in some free trade. Examining and reexamining our values with humility and kindness is a crucial step on the winding path to an ethical life, inside the profession or out. ■

Renée Loth HON. BSA
Editor

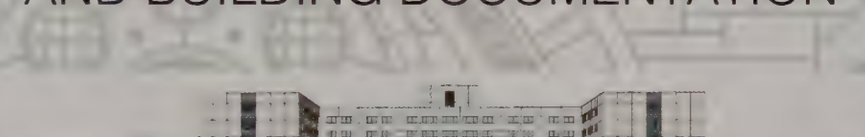


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ON "FOOD" (SUMMER 2018)

It may be a fluke that two Historic Boston rehabilitation projects are mentioned in the "Food" issue, but it might also suggest that the return to traditional foodways is closely aligned with the creative reuse of long-overlooked historic buildings and places in Boston's neighborhoods.

More than 500 Mattapan residents and friends were on hand to dedicate the Urban Farming Institute's new home at the restored Fowler Clark Epstein Farm in June; last winter, at the reactivated Roslindale Substation, very few nights featured less than a couple hundred people enjoying local beer and the company of their neighbors.

Why are these places such magnets? Is it proximity to home? Time and space with others? Compelling places reopened to the public? The food or drink itself? Or is it something even more meaningful: The Fowler Clark Epstein Farm's redeployment as an urban farm puts a physical stake in the heart of a persistent food desert, and the Roslindale Substation as a beer garden enhances the emerging cluster of fine restaurants that has reinvigorated the small business district of Roslindale Village.

Perhaps the comeback of historic buildings and the reemergence of local food culture are mutual signs of hope and inspiration made manifest in our city.

KATHY KOTTARIDIS
Executive Director, Historic Boston Inc.

We are witnessing a cultural shift in the way we look at design "context" and impact. Food is no longer just a program that translates into functional square footage. Because the vitality of the food system connects directly to our planetary culture of health—from survival and emotional needs to climate change and social justice issues—food has become the transformational lever for design.

Over the past 10 years, I've worked in both for-profit and nonprofit sectors across architecture, community development, and permaculture, and it has become clear that problems can't be solved with siloed mindsets. Being sustainable is no longer about checking off a static list of criteria that makes design less bad. Whether you are a chef, farmer, beekeeper, placemaking guru, or policymaker, the questions are: What are our unique value-adding roles, and what capabilities do we need to develop so that we can consciously increase the health of a whole region and its socio-ecological patterns?

I see the role of architects potentially shifting from master builder to living-systems integrator. As a designer who uses the regenerative development approach (a research and community-engagement practice that uncovers the essence of a place as a living system), I recognize five interdependent domains: ecological, infrastructural, social, human development, and economic systems. The goal is to build viability and the capabilities of people, the environment, and the economy to realize potential beyond typical problem solving.

As "On the menu: a healthy future" notes, we can no longer domesticate nature. It calls the shots. The ecology's vitality dictates the viability of the four other domains. Nature works by adding value in multiple arenas and relationships. If value is not added in these five areas or if it degrades over time, sustainability is not possible.

From addressing environmental issues to building infrastructure that supports community connections, the delightful essays in "Assemble the



ingredients" put a spotlight on all five domains. Imagine what could happen if we practice keeping in mind the reciprocal relationships among these domains in any creative endeavor—how might that end up changing our food system and landscapes?

EVA LEUNG
Co-founder and President, Terra Cura Inc.

Climate change is a side effect of an exploitative, extractive, and unsustainable system, which hums along in our—the people's—name. Most of us think and act like we are consumers before we are citizens, individuals before we are ingredients in a community, men and women before we are members of a planetary ecosystem.

To combat all of this, change has to come from within, so here's the good news: We can create a brave new world and have fun in the process. Farms and bees help restore our connection to nature and to its restorative and regenerative power. Knowledge of the sources of things we enjoy—including beer, made from grains—helps us appreciate our dependence on agricultural worlds that we, as urban dwellers, don't think about in our everyday lives. Perhaps more important, community spaces and practices (such as a potluck in a community garden or a *biergarten*), bring us closer to one another.

Cohesive communities also boost immunity and increase resiliency. At Eastie Farm, we grow food together—the operative word being *together*. In a

changing neighborhood that's a microcosm of a changing world, our highly diverse population finds commonalities in a green, happening, and restful space across cultural, ethnic, and linguistic boundaries. Food projects build on those commonalities. Through our work, we aim to turn climate change from a crisis into an opportunity to restore the healthier, happier lives we are meant to live.

KANNAN THIRUVENGADAM
Director, Eastie Farm
Boston

As a former newspaper food editor at the *San Francisco Chronicle* during the 1990s and lifelong cook, I was instantly attracted to the "Food" issue. Like anyone who has spent a lot of time in restaurants, I feel that ambience is a big part of the experience. Sometimes it's subliminal; other times it hits you in the face. Diners just have to accept that owners—in concert with architects, designers, and chefs—dictate the built environment.

It's merely an elaboration of old restaurant truisms, like salty bar snacks sell drinks, or sound levels (hard surfaces and loud music) increase turnover. You keep things quiet and sensuous if you're catering to the wine and foodie crowd or singles who want to propose. Restaurateurs have thought about these issues for a long time; it's exciting that architects are asserting themselves and claiming a bigger role in the dining experience.

The "3 courses" essays hit so many of the important points. Two quibbles: The writers could have benefited from stronger editing and requests for more examples, and as a nonarchitect, it would have helped me to have seen real photos of the restaurants mentioned instead of wonderful concept art. I haven't eaten in Boston for a decade, so I've no way to visualize the spaces your writers mention.

M.A. MARINER
Seattle

There is undeniable artistic expression in the making of food just as there is in the making of structure and shelter. Just as a beautiful building or home provides shelter and pleasure, adds value to its community, and fulfills one of our basic needs, food brings enjoyment, increases the quality of our lives, and facilitates good health. Or, at least, it should.

Fruits and vegetables are accessible in affluent communities, while underresourced communities are designated "food deserts" due to lack of access to fairly priced, fresh foods. Thankfully, as noted in "Plotting an urban revolution," organizations like Urban Farming Institute are providing resources and training to urban residents to grow and share healthy, whole produce—allowing some of Boston's residents to receive the nutrients necessary to develop and maintain healthy bodies in the process. Additionally, land trusts protect these urban green spaces from gentrification and development.

To be fed well is to be nurtured, to feel cared for. It motivates feelings of contentment, like sleeping in a room designed with slow principles. It broadens our capacity for well-being and the ability to extend empathy. When we cook together and share meals, we challenge systematic barriers, infuse empathy, and build community—notions deftly captured in "Setting the table."

Urban designers, architects, artists, chefs, neighborhood grocers are makers who share the responsibility of elevating the quality of life for society's most marginalized, with equity and inclusion in mind. Food and shelter have the power to level prejudice, conjure kindness, and incite action toward justice. As we go about our mostly privileged lives, let's make the commitment to social change, armed with our superpowers to design.

TIFFANY COGELL
Founding member, Cross Cultural Collective
Boston

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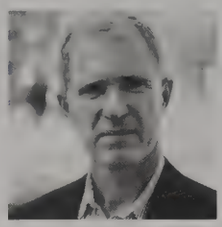
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IN THIS ISSUE


Courtesy of Victoria Beach

Victoria Beach ("Dilemmas of design," page 22), a practicing architect, has chaired the American Institute of Architects' National Ethics Council and held a faculty fellowship at Harvard University's Center for Ethics. She recently served as vice mayor of Carmel-by-the-Sea, California.


Courtesy of Jay Wickersham FAIA

Jay Wickersham FAIA ("Profit or the public good?" page 26), an architect and lawyer, is a founding partner at the Cambridge, Massachusetts, law firm Noble, Wickersham & Heart, and the 2018 president of the Boston Society of Architects/AIA.


Courtesy of WALKER Architects

Bradford C. Walker AIA ("Decency unbound," page 28) practices architecture in Boston, where he has long been active in discussions about professional ethics. He was the 2015 chair of the American Institute of Architects' National Ethics Council.


By M. Shawn Read

Gregory O. Minott AIA ("Do the right thing," page 30) is a founder of DREAM Collaborative in Boston and a member of the board of directors at the Boston Society of Architects/AIA.


Courtesy of Bergmeyer

Jess Smith ("Say something," page 32) is director of human resources and administration at Bergmeyer, where 64 percent of the employees are women.


By Darren Pellegrino

Jason Forney AIA ("Breathing lessons," page 34) is a principal with Bruner/Cott & Associates in Cambridge, Massachusetts. He focuses on deep green design, including new high-performance architecture and the creative transformation of existing buildings.


Courtesy of Alykhan Mohamed

Alykhan Mohamed ("Past is prologue," page 36) is an urban planner at Sasaki. His experience working with informal communities in South Asia inspires his thinking about vernacular design in a global context.


By Karen Vlasak Photography

Emily Grandstaff-Rice FAIA ("The little campus that could," page 38), a senior associate at Arrowstreet, was elected at-large director of the American Institute of Architects for 2018–2020.


Courtesy of Thomas Fisher ASSOC. AIA

Thomas Fisher ASSOC. AIA ("The golden rule," page 40) is a professor in the School of Architecture at the University of Minnesota. His third book on architecture and ethics will be published by Routledge this year.


Courtesy of the BSA

Justin Crane AIA ("Failure is an option," page 42) is a senior associate at Cambridge Seven Associates and a member of the American Institute of Architects' National Ethics Council.


Courtesy of Daniel Perruzzi AIA

Daniel Perruzzi AIA ("When to say no," page 56) is principal and senior partner at Margulies Perruzzi Architects and treasurer of the Boston Society of Architects/AIA.



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UNSTRUCTURED

Opinions and Observations



TunnelTeller

Castle Hill on the Crane Estate
290 Argilla Road, Ipswich, Massachusetts
Through April 2019

Moving beyond static historical interpretation to offer visitors to this site a contemporary understanding through experiential art, Berlin-based artist Alicja Kwade provides a window into the history of the Crane Estate as a pleasure ground.

TunnelTeller is the artist's first large-scale public artwork commission in the US and the third installation in The Trustees of Reservations' Art & the Landscape initiative. Kwade's sculpture was inspired by the former hedge maze located within the garden precinct of the Great House from about 1920–1949. During this period, the maze would have served as a disorienting exploration of the grounds or as a playful puzzle that challenged the estate's many guests. Almost a century later, her piece offers a fanciful interpretation of the maze, a way to play with perception, space, and time.



The artist's choreography of the reveal is successful: The first view of *TunnelTeller* is offered as it sits behind historic gardens walls. Slick concrete and stainless steel lie in sharp contrast to exposed aggregate walls roughened by years of coastal exposure. To my surprise, the piece's quiet, minimal front begs for a party once inside. I was met by large, crossing stainless-steel tunnels; suspended spheres; and reflections of the house, the surrounding natural landscape, and myself. It was as if Carlo Scarpa orchestrated a mash-up between Brion Cemetery and a pinball machine.

A fraction of the size of the historic hedge maze, the piece felt a bit cramped within the garden. You always knew where you were; it lacked a center where you could be truly lost or disoriented and left me wanting more rooms to explore. Scale is critical in landscape, particularly in a place as vast as Castle Hill. Still, *TunnelTeller* gave this Ipswich native a view of the Crane Estate that I could never have anticipated, and that was delightful.

NAOMI COTTRELL ASLA is a partner in the landscape architecture firm Crowley Cottrell.

ABOVE
TunnelTeller, 2018 © Alicja Kwade; stainless steel, concrete, and Azul Macauba, a natural stone.

LEFT
A view of the estate seen through one of the stainless-steel installation tunnels.

Photos: Peter Vanderwarker Photography

GENIUS LOCI

1968 Boston: Channeling the astral plane

There is the physical world, visible, palpable, verifiable. Then there is the metaphysical world, invisible and transcendent. Humankind has struggled for dominance over both realms since we first stood upright.

In Boston, 1968 was a watershed year for the metaphysical. I was reminded of this after reading *Astral Weeks*, Ryan Walsh's exploration of Van Morrison's album of the same name, a record that made the abstract palpable. Walsh's book takes us back in time to a city in cultural upheaval, when invocation of the cosmic became a dimension of artistic exploration, and specific locations became opportunities for transition and transcendence. There was the Catacombs, a basement-dive music venue on Boylston Street near the Berklee School of Music. A space for incubation, its name suggests the mysterious and spiritual practices of a clandestine cult. It was here that Morrison's songs took shape for the album that would jump-start his solo career.

Nearby, in an 1870s former Unitarian meetinghouse, the proto-punk Velvet Underground was conjuring a diabolic brew of hedonism and abandon at a fledgling South End club called the Boston Tea Party, where the band virtually took up residency. The venue had previously served as a facility for producing underground films, including those of Andy Warhol, a project shepherded in part by writer and jug-band harmonica player Mel Lyman. Lyman, who was prone to declaring himself an incarnation of the Almighty, gathered his followers in Roxbury's Fort Hill community, dubbing them the "Lyman Family."

Elsewhere, at a Newton home and in the basement of Boston University's Marsh Chapel, two Harvard professors—Timothy Leary and Richard Alpert—urged a generation to "turn on, tune in, drop out," and a classical FM music station on Newbury Street, WBCN, began broadcasting underground rock from midnight until dawn.

The Fort Hill folks occupied a corner of the Tea Party, a New Age gift shop on the second floor, but all creative activity relocated to a group of houses surrounding the Highland Park Tower—also known as the Cochituate Standpipe—on Fort Hill. The location is of special importance, highly visible and historically significant, dating back to a Revolutionary War fort, yet this neighborhood was among the poorest in Boston. Members of this seminal commune were showing the way toward a city reborn, rooted in history and channeling the communal energy of a City on a Hill.

The spirit world needs vessels, and in 1968 Boston was willing to provide these, despite a reputation for stodgy conservatism. What stands out from each of the threads woven into the narrative underlying Walsh's *Astral Weeks* is the importance of place and the spirit that was found in, or drawn to, specific locations. Spirit manifests in place, in time, in periods of cultural transition, and in the actions of people in the throes of creative impulses. It also manifests in buildings—something to consider as we continue to shape this strange and compelling city.

A. VERNON WOODWORTH FAIA
is a founding member of the AKF Code Group and a faculty member at the Boston Architectural College.

BELOW
View of the Cochituate Standpipe in Fort Hill, Roxbury, 1968. Photo © City of Boston





Photo: Equal Justice Initiative/Human Pictures

SEEN

The National Memorial for Peace and Justice

Montgomery, Alabama

The first element I saw when I entered this monumental architectural undertaking was a sculpture of the enslaved: the agonized faces of a mother and baby, a man brought to his knees by unseen violence, an older woman bowed low. Ascending the pathway, I approached the large open structure and the first of 800 stelae, recording the names of lives lost to lynching. Walking further, the ground sloped down until the steel pillars hung above my head—grief, trauma, and moral failure pressing down on visitors to this six-acre site.

I pastor a congregation whose earliest members included 39 enslaved persons. Conceived by the Equal Justice Initiative and designed in part by MASS Design Group, this memorial—dedicated to the legacy of those who were enslaved, lynched, and humiliated by Jim Crow segregation laws—reminds us all to ask how we hold the weight of a hidden history. As a congregation we've begun to ask: How do we acknowledge its connection to the ongoing legacy of racial terror? In 1873, poet William Cullen Bryant wrote: "The truth crushed to earth will rise again." Today in Montgomery, a profound truth is rising.

REV. DAN SMITH is senior minister at First Church in Cambridge, Massachusetts.

CONSIDERED

Library of Mexico Jose Vasconcelos

Mexico City is a sprawl of buildings saturated in bright blue, fiery red-orange, and confectionery pink, and punctuated by fans of green palms, spiky yucca, arms of cacti. Common buildings look like tourist attractions, colorful and eye-catching. The city's libraries are more muted but still top to-visit lists.

The Library of Mexico Jose Vasconcelos and its courtyard plan, with rhythms of expansion and retreat, welcome wanderers as well as readers and researchers. Visitors can delight in the discovery of pocket libraries, each designed by a different architect and each holding the personal collections of significant Mexican writers: Jorge Calvillo for Alí Chumacero; BGP Architects for Antonio Castro Leal; arquitectura 911sc for Jaime García Terrés; Alejandro Sánchez García Arquitectos for José Luis Martínez; and JSa Arquitectura for Carlos Monsiváis. Small spaces with two stories of stacks, each has design details that reference their respective writers. One enters feeling like a trespasser and leaves with an intimate sense of a lost literary figure, without ever opening a book.







CAITLIN HART is the professional program manager at the Boston Society of Architects/AIA.

CLOCKWISE FROM LEFT
Each pocket library has a rhythm created by openings among two-story stacks; floor detail in the library for Carlos Monsiváis, known for his love of cats; quotations scrawled on notes form a literary lampshade. Photos: Caitlin Hart

LAST CALL

Three shows closing September 30



Breathing Room: Mapping Boston's Green Spaces
Norman B. Leventhal Map & Education Center
Boston Public Library
700 Boylston Street, Boston

Through a cartographic lens, this exhibition maps Boston's open spaces, from how the oldest public park in the United States morphed into a recreational center to how landscape architects created green swaths like the Boston Common and the Emerald Necklace within a bustling city. What does the future hold for the city's parks?

Lived Space: Humans and Architecture
deCordova Sculpture Park and Museum
51 Sandy Pond Road, Lincoln, Massachusetts

How do the spaces we construct and live in inspire us? More than two dozen artists, Elsa Dorfman and Abelardo Morrell among them, respond to this question through drawings, paintings, and photographs curated from the museum's permanent collection. Their artwork explores our ties—physical and psychological—to the built environment.



RIGHT
Myself, The Beginning of the Year, March 1973, by Elsa Dorfman, 12.75 × 18.75 inches.



Home
Boston Children's Museum
308 Congress Street, Boston

Many of the artists featured in this gallery lost their homes during the 2011 earthquake and tsunami in Japan. Through their artwork, these students from Tohoku University of Art & Design delved into the psychological and emotional territory that mines the notion of shelter, belonging, and identity.

LEFT
Kyukon's Home, 2018, created as a playful home for the mascot Kyukon (a word that describes a plant bulb) by Minatsu Ariga and her students, mixed media. Photo: Lex Piccione



Boston's hidden sacred spaces

Mount Auburn Cemetery, Cambridge, Massachusetts
May 24, 2018

The percentage of Americans who do not identify with any organized religion increased by more than 40 percent between 2007 and 2014—closing in on a quarter of the population and rising to a third among millennials. Perhaps the lack of formal ties is one reason why nontraditional sacred spaces continue to attract attention. People still look for spiritual comfort, but more often on an *ad hoc* basis.

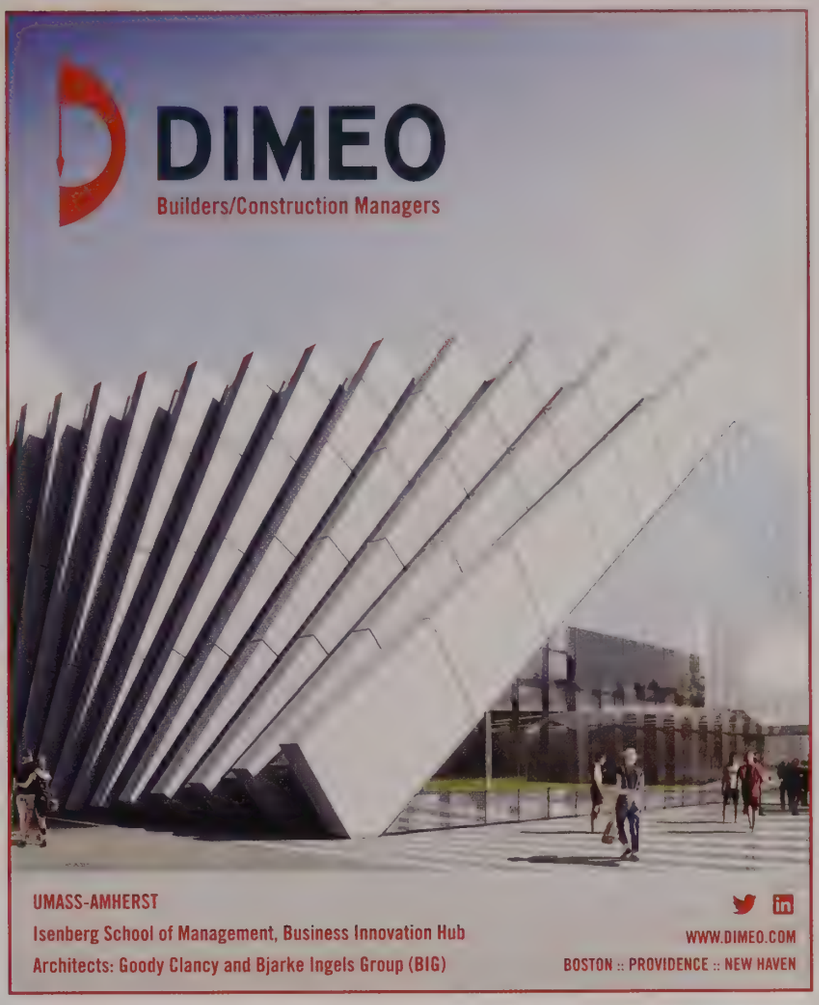
Sacred spaces that are not associated with congregations were the subject of a lively and well-informed conversation appropriately held at Mount Auburn Cemetery's Story Chapel. Wendy Cadge, professor of sociology at Brandeis University, presented the findings of the team she worked with, which included architectural historian Alice Friedman (of Wellesley College) and photographer Randall Armor. So far, they have documented more than 60 sacred spaces—including chapels, meditation rooms, and prayer rooms—throughout metropolitan Boston. These spaces are not part of the primary mission of their sites but have been designated as sacred by the host organizations—thus deliberately excluding Fenway Park.

Sacred spaces occur in airports, hospitals, colleges, shopping malls, and prisons, among other unexpected sites. For now, the study is limited to buildings, succinct historical narratives, and somewhat eerily unpeopled photographs. Future plans include oral histories and perhaps the addition of green spaces.

Cadge's tour encompassed examples of both well-used and rarely used sacred spaces; spaces requested by users and those initiated by sponsoring institutions; places in their original condition and those that have been transformed over time. Some are architect-designed, some are extemporaneous; many have tried to become more intimate and inclusive. Who knew: Nurses requested the chapel at Boston Children's Hospital; prisoners are partial to statues of Mother Teresa; and Harvard Business School students have a Moshe Safdie–designed retreat in which to contemplate the higher purposes of life.

WENDY FRONTIERO is a Boston-area architect and historic preservation consultant.

ABOVE
A Native American sweat lodge at Massachusetts Correctional Institution at Norfolk is used for ceremonies under the guidance of a Native American chief volunteer. Photo © Randall Armor





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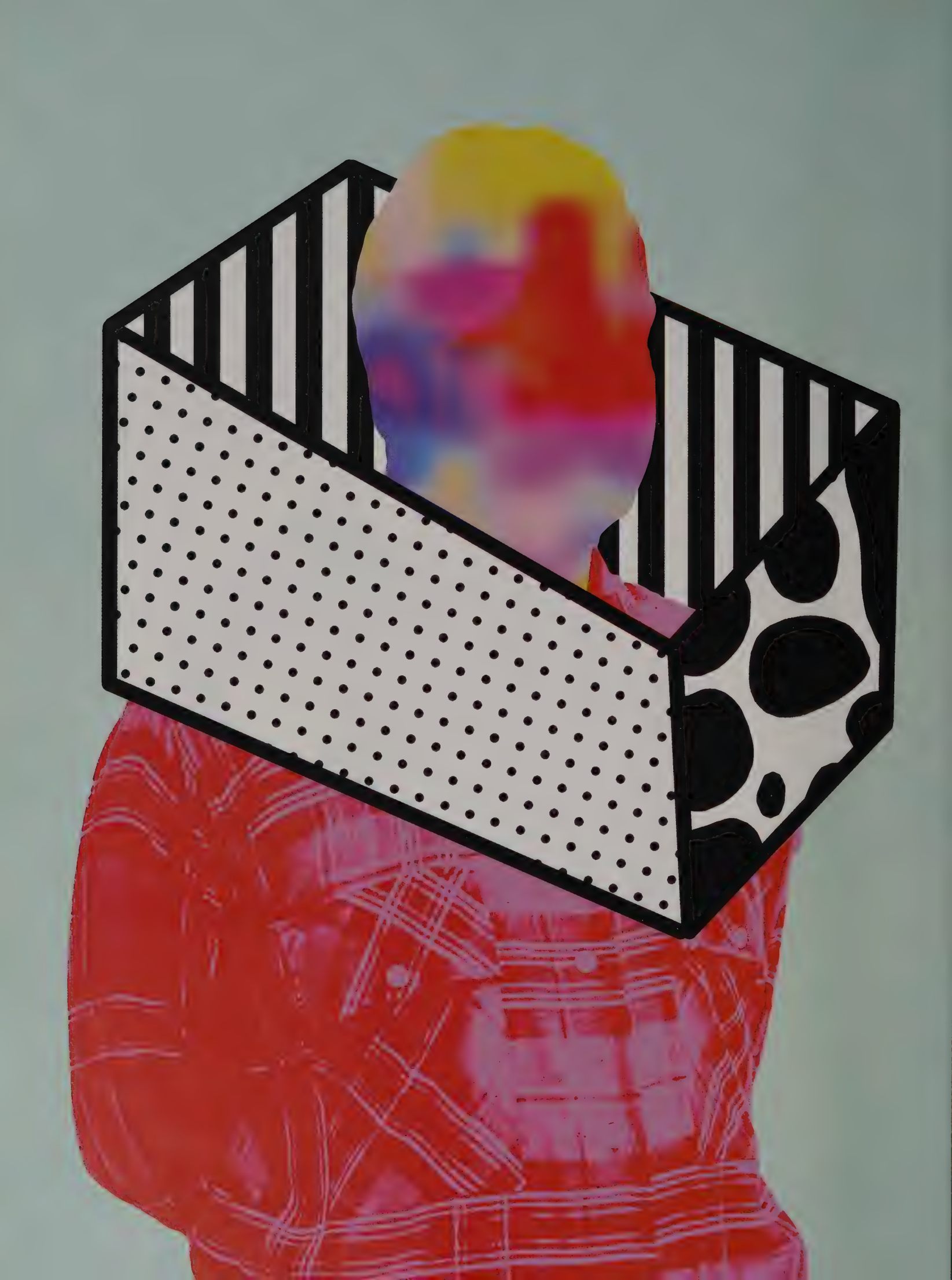
Ethics

FALL 2018

Right and wrong, good and evil, virtue and vice—these dichotomies offer deceptively tidy labels in the debate over what constitutes ethical practice. This issue of *ArchitectureBoston* grapples with the messy choices, conflicts, and responsibilities that confront the profession today.



Aye Okay, 2017, digital collage by Tyler Spangler.



DILEMMAS OF DESIGN

THE MEANS, ENDS, AND AESTHETIC LENS OF ARCHITECTURE

by Victoria Beach

We humans have problems, big problems, life-or-death problems. We often die too young—from diseases, in accidents, and as punishment for alleged crimes. Luckily, there are special people with unusual skills and training who are pledged to come to our rescue and protect us from these harms. Using the ancient sciences of biology, physics, and logic, these specialists fight the existential human problems of illness, injury, and injustice. Their devotion to the public values of health, safety, and justice give them indispensable powers to promote the survival of civilization. Resembling a kind of league of nerdy superheroes, they are the learned and licensed professionals of medicine, engineering, and law.

As even Spiderman knows, with great power comes great responsibility. That's where professional ethics come in. Professionals have moral obligations to all four corners of their practice: to the public, to their clients, to their knowledge, and to the professionals themselves. Let's unpack these four in reverse order.

Professionals must nurture themselves.
If they don't, they risk decline and extinction. If professionals stopped existing, they would stop protecting us. This would amount to an unacceptable abandonment of their core public values. The ethical duty to self-service includes any action that helps sustain the profession and its ability to serve others, such as helping emerging practitioners, ensuring comfortable pay and working conditions, and cultivating talents from diverse origins.

Professionals must create knowledge.
The sciences underlying their practice are the only tools professionals have to solve society's problems. Professionals must keep those tools sharp, which includes efforts such as conserving historical insights, experimenting with new ideas, exploring emerging technologies, creating robust internship programs, supporting academic

ARTWORK: Seattle-based graphic artist Tyler Spangler is a "psychology graduate and Art Center College of Design dropout." Since 2011, he has been creating and sharing two original digital collages every day on his website and social media. All images courtesy of the artist.

LEFT
Pretty Cage, 2017, digital collage by Tyler Spangler.

training, examining fieldwork for possible lessons, and candidly sharing experience and knowledge with colleagues.

Professionals must privilege their clients. The work of professions is not primarily inside the laboratory or the ivory tower but in the outside world: It is applied work rather than academic work. Clients supply the casework where professionals apply their specialized knowledge. But, by definition, this knowledge is more advanced than lay knowledge, resulting in a potentially dangerous power imbalance. To counter this danger, professionals must put their clients' interests before their own. Only with this fiduciary relationship can clients have the faith (fide) that what they don't understand won't be used against them. This ethos can be traced as far back as ancient Rome, where orators who argued in court on behalf of the less literate were prohibited from taking any payment.



Professionals must serve the public. The sum of all possible clients equals the larger public and, accordingly, the largest professional obligation is to the public. Although professionals must prefer client interests over their own, they must prefer public interests over both. This means ensuring that work for clients also promotes our human rights to a dignified, secure, fair, free, and sustainable society. Conversely, professionals must not use their skills to help clients get away with anything that runs counter to larger interests and, if necessary, must raise client values to align them with public values. In fact, the failure of a profession to uphold its defining public value (such as safety), by definition, dissolves that profession.

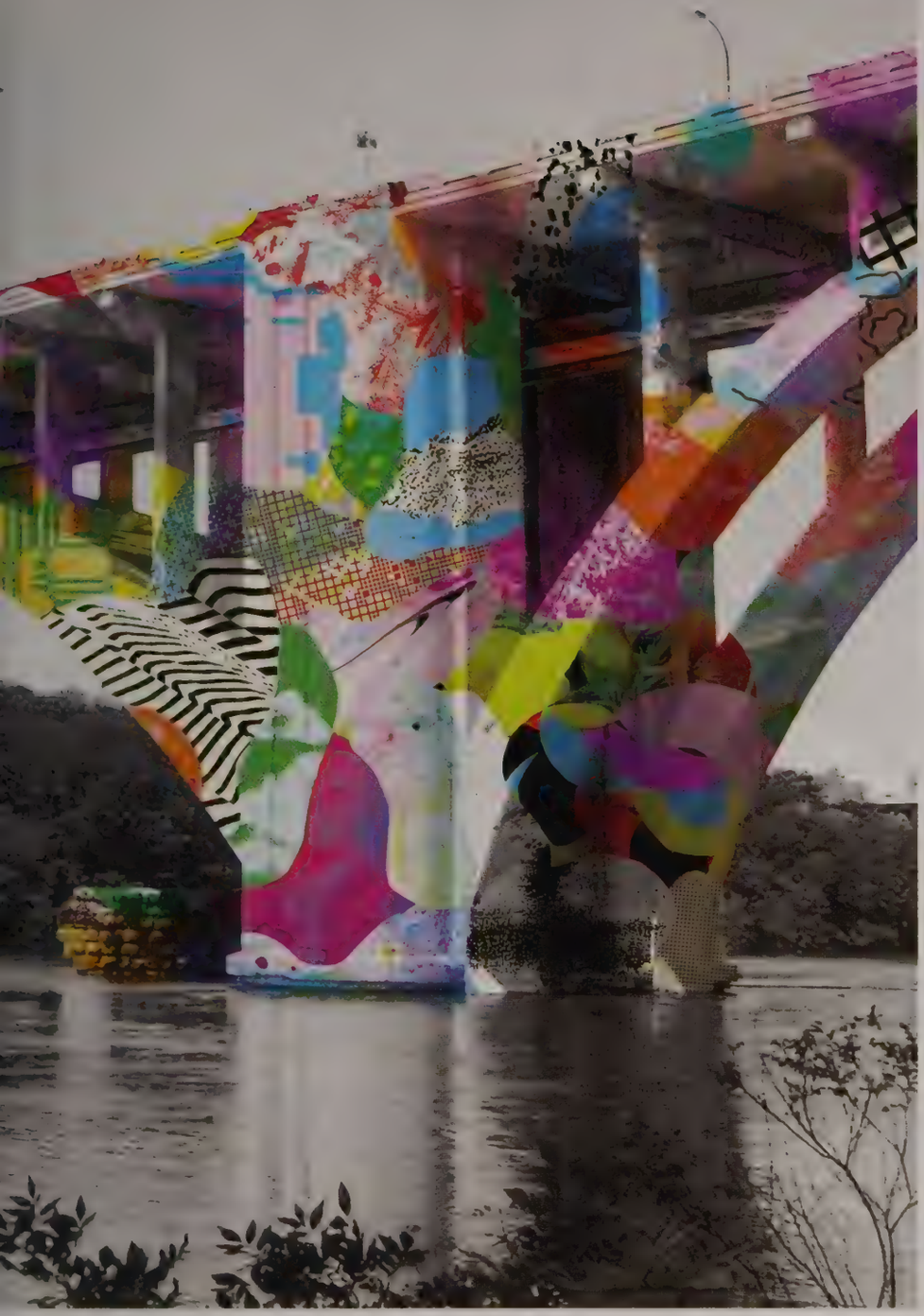
A building designer who managed to uphold all these ethical values would certainly qualify as a morally excellent professional and engineer but hardly as an architect. As Gropius remarked, "Architecture begins where engineering ends." That is, to be an architect requires more than ethical excellence; it requires aesthetic excellence. In fact, maintaining a critical distance from ethics is often exactly how architects achieve aesthetic excellence. Take the example of one of the biggest ethical controversies in contemporary American architecture.

In the 1970s, the Hancock corporation boldly proposed an illegally large headquarters in Boston's historically scaled Copley Square. The local residents and architectural community rallied to denounce the project and its unethical New York architect, I.M. Pei. Indeed, the Boston Society of Architects/AIA issued the following official statement to the Boston Board of Zoning Appeals: "Copley Square would not only suffer drastically from the intrusion of so gross a building, but worse would be the damage inflicted on the morale of the city by the spectacle of a corporation rich enough to make mockery of the law." But as a large employer in the region, Hancock had tremendous leverage in pursuing its appetites. It threatened local government until the zoning code was changed enough to permit a somewhat unobtrusive tower located off the square at the back of a neighboring block.

Even that audacity turned out to be a bait and switch. Once Hancock had gotten the idea of a skyscraper approved, it threw out the smaller design and proposed something 50 percent larger—too big not to disfigure Copley Square. Not wanting to dirty his own hands with this corporate greed, Pei quit the project. Believing Hancock would otherwise hire lesser designers and wreck his hometown, Henry Cobb (Pei's Boston-born partner) took the project.

In this drama, Pei put the means before the ends and Cobb, the ends before the means—classic ethical roles, which moral philosophers call "deontological" (prioritizing "duty" or "deon" in Greek) or "consequentialist" (prioritizing "consequences" or results). For his consequentialist decision, Cobb was savaged by his Boston peers, who believed he had abandoned the moral duties of his profession for the amorality of commerce.

Out of this ethical predicament, however, Cobb created perhaps his most ingenious aesthetic accomplishment. He infamously pushed the available glass technology to the point of failure to achieve a scale-less reflectivity. At street level, this hypersmooth mirror closed the architectural gap caused by Hancock's building site by repeating and appearing to connect the cornice lines of the adjacent buildings. At the skyline, it helped dissolve the monstrous bulk into an abstraction. By rendering a mass as pure



surface, Cobb created a plane that he could then fold around the site into a contextually responsive geometry. The resulting shape opened up new views to the beloved Trinity Church while the full-height wrinkle on the side facing the square made the building's narrowest elevation seem even slimmer. Meanwhile, the expansive planes on the connecting sides broadcast Hancock's presence from miles away.

A project born of scandal grew into a revealing essay on the opposing ethics of community pride and corporate ambition, and won most major architectural awards along the way.

In essence, Cobb defied ethical norms in his profession in order to aesthetically explore and expose ethical norms in general. Without artistic freedom, architecture, "the mother art," cannot exist and cannot advance our understanding of ethics or any other aspect of our reality.

As Nobel Laureate Joseph Brodsky points out, "Aesthetics is the mother of ethics." In other words, aesthetic knowledge comes first and provides the source of moral knowledge. He explains further:

"The tender babe who cries and rejects the stranger . . . does so instinctively, making an aesthetic choice, not a moral one . . . even without fully realizing who he is and what he actually requires, a person instinctively knows what he doesn't like and what doesn't suit him. In an anthropological respect . . . a human being is an aesthetic creature before he is an ethical one."

The Greek roots of the word *aesthetics* mean "to perceive," and the Latin roots of *perceive* mean "to seize wholly, or see all the way through." The Greek roots of the word *ethics* mean "character" or "manners" (the word *morality* is no more than the Latin translation with similar roots in "habits" or "customs"). Aesthetics, then, is the lens through which human character and customs can be best interpreted.

It is crucial that architects enter the age-old conversation about professional ethics; these values provide the heroic protections that keep us alive. However, rather than just following a preexisting conversation developed through the priorities of other disciplines, architects could be leading an even deeper conversation—one that analyzes moral values right along with the other essential aspects of human life. Ethics, after all, is just one of many cultural products of humanity's natural aesthetic preferences. And architects are actually the only professionals with the aesthetic qualifications to design our culture and lead our society, through inspiration rather than regulation, toward lives better lived. ■

VICTORIA BEACH, a practicing architect, has chaired the American Institute of Architects' National Ethics Council and held a faculty fellowship at Harvard University's Center for Ethics. She recently served as vice mayor of Carmel-by-the-Sea, California.

LEFT
A Trip to the Farmland, 2017,
digital collage by Tyler Spangler.

ABOVE
Try Crossing Circus, 2017,
digital collage by Tyler Spangler.

Profit or the public good?

THE EVOLVING HISTORY OF ETHICAL PRACTICE

by Jay Wickersham FAIA



Here's how the question comes up: I'm with a group of architects, and we're talking about how hard it is to make money in the profession. Someone turns to me, as the only lawyer in the room. Wasn't there a time when it was different? When fees were set by the American Institute of Architects, under the old Code of Ethics, so architects weren't always trying to undercut each other?

Well, yes, it was different, once upon a time…

Back in 1970, members of the AIA operated under a Code of Ethics that hadn't substantially changed for more than a century. He (at that time, AIA members were 99 percent white men) thought of himself as an expert sheltered from the hurly-burly of the marketplace. So that an architect's professional judgment wasn't contaminated by conflicting loyalties, AIA members could not act as builders or developers. They could not advertise, talk with a potential client who was working with another architect, or offer free services to help deserving clients.

As compensation for these self-imposed economic constraints, the ethics code made architects promise not to compete against one another on the basis of price. Every AIA chapter published a mandatory fee schedule, based on sliding scales for projects of different types and sizes.

In short, the old AIA Code of Ethics was all about money. It created a safe, sheltered, cozy system, conducted under a polite set of rules. And sometime between 1970 and 1980, it was blown to smithereens.

The system was destroyed by an unlikely alliance of the political right and the political left. The attacks of those advocates were primarily aimed at the big, powerful professions, doctors and lawyers, who operated under similarly restrictive codes of ethics. The much smaller architectural profession got caught in the cross fire.

Those on the right were advocates for a laissez-faire economy. Remove the constraints of professional ethics codes, they argued, and the deregulated market would force professionals to become more competitive and innovative. Those on the left also wanted to abolish the ethics codes, in the interest of a more egalitarian society where professional services would be readily available to all.

Both sides agreed that existing professional ethics codes amounted to price fixing. Through a series of strategic lawsuits, they convinced federal judges, enforcers at the Department of Justice, and ultimately the US Supreme Court. In decision after decision, the pillars of professional practice—fixed fee schedules; bans on advertising, soliciting work, and free services; bans on acting as a builder or developer—were swept away. By 1980, the American architect was practicing in a changed legal landscape, where we find ourselves today.

So what has happened to architectural practice since then? As in so many areas, the vision of a deregulated market seems to have triumphed. The contemporary architect has been transformed from a sheltered expert into a marketplace competitor.

We have seen explosive growth and mergers of large firms. We have seen novel combinations among architects, engineers, builders, and developers. We have seen the globalization of the design marketplace. And we have seen the revolutionary impact of Building Information Modeling (BIM) and other new technologies.

Today, alternative models of practice are flowering at many different scales. Nimble young firms offer services outside the traditional definition of architecture: from participatory planning to product design, from brand consulting to real estate development. New digital technologies enable smaller firms to form alliances and compete for very big projects.

There has been less progress toward the egalitarian goals of the left. There is still no government subsidy of low-cost architectural services comparable to Medicaid or legal aid. We do have a network of community design clinics, such as the Rural Studio at Auburn University. Private firms offer *pro bono* services, encouraged by the AIA's One Percent Solution program. And we're starting to see nonprofit architectural firms, of which the Boston-based MASS Design Group (on whose board I sit) is the largest and most prominent example.

The emergence of public interest architecture points to the most important, if unintended, consequence of the legal battles of the 1970s: the redefinition of architectural ethics.

When the old AIA Code of Ethics was destroyed, the profession was forced to untangle ethics from financial self-interest. Back in 1970, the code was silent on the need to make design available for those who can't afford an architect. It was silent on combating discrimination and protecting human rights. It was silent on an architect's duty to preserve historic buildings and the natural environment. Today the AIA Code of Ethics no longer serves as a protective shield, an attempt to keep architects financially solvent. The current ethics code contains a set of aspirational goals, describing how architects can try to serve the public good.

Architects are now fiercely debating those goals. How can we reconcile our desire to serve the public good with the pressures of the marketplace? Can the profession remedy its own patterns of racial and gender inequality? What is our duty of stewardship toward the environment?

An ethics code should be a spur and a goad to the conscience; it should force architects to articulate and debate the questions that we find most uncomfortable. It should push us to find forms of practice that are both efficient and creative, both profitable and just. ■

JAY WICKERSHAM FAIA, an architect and lawyer, is a founding partner in the Cambridge, Massachusetts, law firm Noble, Wickersham & Heart, and the current president of the BSA/AIA.

MORE ONLINE
For more on the history and evolution of architectural ethics, see the writer's article in *Architectural Theory Review* (2016).

ARTWORK: Pages 26 to 43: Born and based in Scotland, Emily Moore is an alumna of the Massachusetts College of Art and Design international exchange program. Her paintings and collages explore the tension between environments and the manmade structures that inhabit them. All images courtesy of the artist.

LEFT
Playground, 2014; gesso, acrylic, graphite, varnish, enamel on panel, 30 × 30.5 cm.

Decency unbound

THE MORAL TRAP OF SOLITARY CONFINEMENT

by Bradford C. Walker AIA

Architects swear a duty to safeguard the health of all who rely on our work. How, then, to reconcile any architect's role in constructing prison facilities for long-term solitary confinement?

As many as 80,000 prisoners in the US are being held in solitary confinement, often in conditions that have rightly been described as torture. Though its Code of Ethics can be said to already prohibit design of many of these facilities through its ethical standards, the American Institute of Architects requires members to "uphold human rights in all professional endeavors" and—added in 2017—to design buildings and spaces that "will enhance and facilitate human dignity" as well as the health, safety, and welfare of both individuals and the public. But the AIA has no enforceable rules to ensure that architects understand that "human rights" is more than a squishy feeling. The United Nations, having first defined the term in 1948 to ensure that the horrors of World War II would never be repeated, more recently asserted that long-term solitary confinement is, indeed, a violation of human rights.

Much has been written on the psychiatric harm that solitary confinement inflicts on prisoners, and science has shown us that such harm is permanent. Critically for our profession, it is the actual architecture—the design of a space with no windows nor an opportunity to see or interact with others—that is the instrument of that harm. The design of these sensory-deprivation chambers is an active, deliberate means of permanently injuring and incapacitating people through architecture.

As citizens in a democracy, we have the right—or at least the opportunity—to ensure that our government properly reflects our values. But we must be careful to distinguish between the individual views of architects and their duties when acting as professionals.

In this regard, it's instructive to consider the professional code of ethics maintained by the American Medical Association, which makes a distinction between an individual doctor's personal view of capital punishment, for example, and that doctor's professional obligation to "do no harm."

"An individual's opinion on capital punishment is the personal moral decision of the individual," the code reads. "A physician, as a member of a profession dedicated to preserving life when there is hope of doing so, should not be a participant in a legally authorized execution." Such involvement, the code goes on to delineate, includes prescribing or administering lethal-injection drugs, monitoring vital signs, or even attending an execution in the capacity of a physician.

Like doctors, individual architects are free to hold whatever opinion of these matters suits their consciences, and to take any legitimate steps they choose to persuade their elected representatives and their neighbors of the correctness of their views. When acting as an *architect*, however, and not simply as a citizen, the moral and ethical question is properly viewed through an entirely different lens.

A professional is a member of a learned group entrusted by society with upholding a critical societal value. The professional is expected to uphold society's interests in health—let's say in the instance of the medical field—and in exchange society affords that professional near-monopoly privileges to practice. Only certain people have the right to practice medicine. Or architecture.

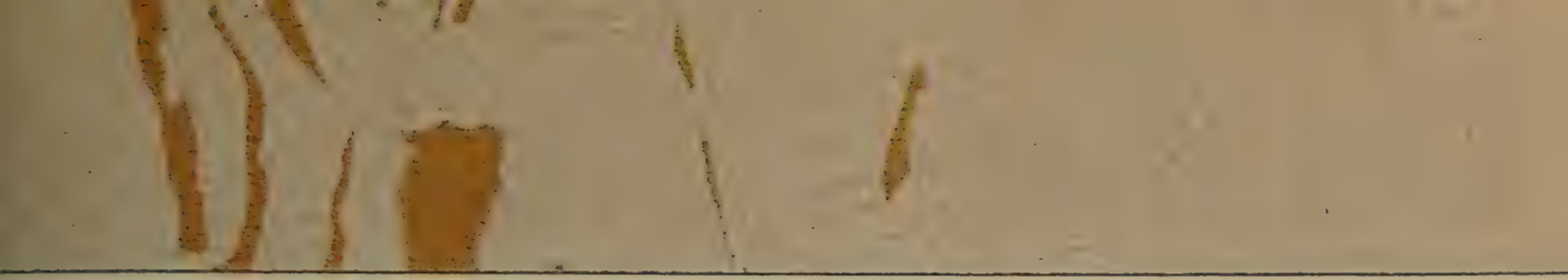
The use of any architect's specialized skills and privileged position to design spaces that in and of themselves torture individuals is an obvious breach of the mandate to "facilitate human dignity" and "uphold human rights." The AIA should make this clear.

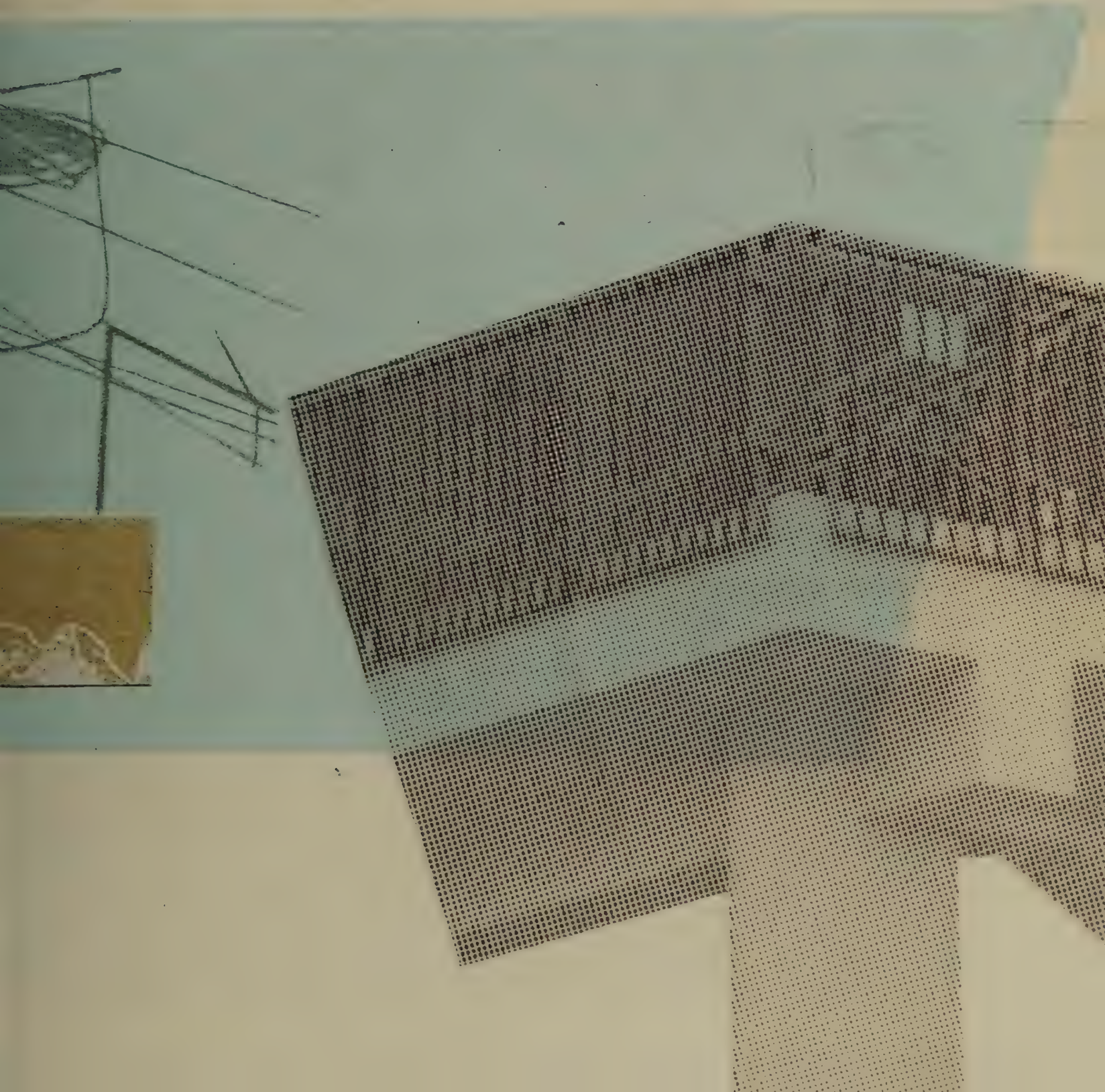
The beauty of a code of ethics is not just that it guides and limits its adherents, but also that it empowers them. Architects are trained problem solvers. Does anyone doubt that a trained architect could design a facility to protect other inmates and prison staff from dangerously violent individuals, meeting the needs of criminal justice without inflicting harm?

Professional ethics are the common values that bind a group together and make them architects, or doctors, as opposed to something else. To participate in creating designs that harm is a failure of our duties to society, to the profession, and to one another. ■

BRADFORD C. WALKER AIA practices architecture in Boston, where he has long been active in discussions about professional ethics. He was the 2015 chair of the AIA National Ethics Council.

RIGHT
Untitled collage; mixed media.





Do the right thing

THE CASE FOR DIVERSITY AS STANDARD PROCEDURE

by Gregory O. Minott AIA



Whitney M. Young, Jr.'s speech at the American Institute of Architects' 1968 convention was an impatient and indignant assessment of the racial homogeny of the design profession and its "thunderous silence" regarding what he called a fundamental human rights violation: the design of cities for exclusivity rather than inclusivity. Young, then director of the National Urban League, argued that the relevance of the profession and even the future of the country was at risk if this misuse of talent continued.

Young's stance is as relevant now as it was 50 years ago. Statistics show that less than one in five newly registered architects in the US identify as a racial or ethnic minority. Roughly 2 percent of registered architects are African American, and a mere two one-hundredths of 1 percent are African-American women.

It's too easy to fall back on the "escape hatch" Young mentioned: that our roles are typically as designers and planners, not builders or developers, so our power to have a meaningful social and civic impact is limited by our service relationship with clients. Maybe that needs to change. Perhaps more designers could expand into development, policymaking, or other roles with a broader impact. More diversity in the profession would promote innovation, just as it does in other industries.

I was born in Mandeville, Jamaica, a country where 97 percent of the population is of African descent. It was there that I was first educated as an architect and first worked in the field. When I moved to the United States in 1999 to pursue my master's degree at the New Jersey Institute of Technology, I was ignorant of many of the issues Young championed. I did not expect that a comrade from Jamaica and I would be the only black people in the entire master's class, with just a few other black students and no black professors in the school of architecture.

Over the years I have learned that as black architects we must be excellent, and we must be educators. Early in my career, I designed a large private residence for a client in New Jersey. For many months, our communication took place over the phone or through emails. When we finally met in person, his first comment was, "Oh, wow, I didn't know you were black. You were great to work with." There was an awkward silence during which the negative implication of his comment hung in the air. I moved on and hoped this encounter was a step, for one man at least, toward normalizing the idea that an architect can be black.

We cannot, however, simply wait for enough "Oh, wow" moments to organically shift attitudes and make the profession more welcoming and more appealing to a broader range of professionals. Young was a man of strategic action, and that is the path we need to follow to experience the change we need in architecture.

What if a company's commitment to equity, diversity, and inclusion could be quantified and rewarded? One example is the JUST program, a voluntary disclosure tool that acts as a "nutrition label" for socially just and equitable organizations. Federally regulated nutrition disclosures help support a healthier food culture in the US while also encouraging new businesses and more responsible farming practices. In the same way, we could create an economic environment that goes beyond minimum requirements for minority and woman-owned businesses on public projects and reward firms with higher social justice and equity performance ratings with tax breaks and other financial incentives.

Imagine if such a score became a key criterion for a design excellence award. The AIA Code of Ethics could include a new canon, an explicit industrywide commitment to improving diversity, inclusion, and equity, and topics such as implicit bias could be addressed on the industry's registration exam as a prerequisite to licensure.

Let's make it official—make it a truly fundamental part of the profession. Once we do, more equitable, diverse, and inclusive firms can be better positioned to hire and retain top talent. Such performance indicators could also encourage firms to allocate more resources to support minority students who disproportionately come from economically disadvantaged backgrounds, improving college completion rates and building a more diverse pipeline of design professionals.

Young ended his speech with a quote from an ancient Greek scholar who asserted that justice for society will be achieved "when those who are not injured are as indignant as those who are," making it clear that the lack of diversity he observed was not a matter of circumstance but a matter of choice. We must choose to get uncomfortable and have explicit, messy conversations, then commit to making systemic change. Inequity, exclusivity, and racial homogeny in our offices and in the places we design make us less relevant, and that should make every design practitioner indignant. Let's choose real, innovative change to create a more just profession. While we're at it, we will be creating a more just society. ■

GREGORY O. MINOTT AIA is a founder of DREAM Collaborative in Boston and a member of the board of directors at the BSA/AIA.

LEFT
Chamonix Chalets; mixed media.

Say something

BYSTANDER TRAINING STEPS UP

by Jess Smith

We are in the middle of a deeply unsettling time in the quest for gender equity in the workplace. Witnessing the downfall of Harvey Weinstein, Mario Batali, and Richard Meier, satisfying as that might be, doesn't always provide clarity. How can we learn from this national mess, this tangle of #metoo, and create a useful framework for the conversation?

When it comes to sexual harassment, architects are no different from other professionals. They can stumble, trip, and fall just like everyone else. Clumsily. Awkwardly. Defensively. The traditional training to prevent sexual harassment in the workplace is often designed to avoid lawsuits, bad publicity, or negative impacts on a firm's bottom line. Based on the binary idea that there are harassers and there are victims, it is far less effective than it should be.

Most people don't want to see themselves in either category, so gender stereotypes are reinforced rather than defused, and the reporting either doesn't happen or loses steam and focus. Human Resources is generally the fulcrum, the collection point for accusations, and the principal investigator of he said/she said. If employees have less than full trust in their HR representative, few will feel heard or believed or supported.

A relatively new solution to this problem is Bystander Training. Rather than encourage people to go behind closed management doors to report bad behavior, it teaches a broader message of collective responsibility and collective action. A third party—the witness—takes a role between victim and perpetrator, observing the behavior and empowered to intervene. The training provides tools—mainly verbal intervention tactics and strategies to distract or divert behaviors in the moment—that help support someone who is experiencing discrimination or harassment. Workshops help people take positive, nonaggressive action that empowers them to feel competent and responsible, rather than passive and complicit. The approach is gaining traction on college campuses, in sports teams, and among those looking to defuse harassment of immigrants or other vulnerable groups.

When it comes to sexual harassment in the workplace, bystander training is intended to help address a common thread that underlies many of these cases: People seemed to know about a perpetrator's reputation, sometimes for years. Why didn't anybody speak up?

Research from the Australian Human Rights Commission reveals that bystanders are far more likely than targets to take action against harassment, but it requires an office culture brimming in integrity. Trust that there will be effective follow-up is key to a bystander taking action. The Australian report notes that "some of the most significant reasons for underreporting sexual harassment are beliefs that the harasser will not receive any penalty and low expectations by employees that justice will be done." People not only need to feel safe enough to speak up, they need to feel respected by their peers and even more confident that they are respected by management.

How do you know if your firm falls into this category?



Look around. Is there a long line of people who want to work there? Is turnover low? Are the leaders secure, unconcerned about the next generation moving up to replace them? Do people spend time together outside of work? Is work-life balance truly supported, so that flexibility and health are actual benefits? Is there an obvious absence of fear? Is conflict rare, and dealt with effectively when it does occur? The list of questions is long and keeps growing. How many women work in the firm? What percentage of the leadership is female? Is there an honest emphasis on wellness and family? When these issues are easily and openly discussed and the policies exist to support them, you are working in the right place. These are the foundations of an office culture that will train its entire staff to prevent harassment and will not tolerate the behavior if it occurs. ■

JESS SMITH is director of human resources and administration at Bergmeyer, where 64 percent of the employees are women.

BELOW
Detail of *Partitions*, 2014; gesso, acrylic, varnish on panel, 28 × 29.5 cm.



Breathing lessons

WHEN NATURE IS ARCHITECTURE'S TEACHER

by Jason Forney AIA

If ethics is navigating the moral ground between right and wrong, good and bad, then we should acknowledge that many things about designing and constructing buildings are not good. Many current practices are destructive and wasteful. The operation of buildings creates nearly half of all climate emissions. We send billions of gallons of mostly clean water down drains, to be processed as toxic waste. Construction often displaces species from their natural habitats and people from their communities. Most buildings are far from beautiful, have nothing to say about their particular place, and contain materials made from unknown chemical compounds. Buildings can be barriers, deepening social divides and separating people.

Still, I'm optimistic.

We've made progress toward reducing these impacts, mostly by thinking about how to improve current practices. What happens when we stop thinking about "less bad" and instead leap toward *good*? I've had the opportunity to work for clients who've committed to this idea through pursuit of the Living Building Challenge (LBC). It has been transformational.

The LBC launched in 2006 as the world's most stringent green building standard. Projects must meet 20 simple but thoughtful imperatives, designed to challenge current practices and work toward a vision of a positive future where buildings are inspired by nature's model, where energy and water systems give back more than they take, harvesting resources from the bounds of their sites. The LBC is not one size fits all; each project is encouraged to respond in its own unique way.

More than a rating system, it's also an advocacy tool, pushing to change current regulations or manufacturing processes. To its founder and creator, Jason F. McLennan, the LBC is foremost a design philosophy that centers around the question: "What does good look like?" In the mid-1990s, when McLennan first conceived of the LBC, he imagined a dramatic raising of the bar, with a generation of designers ready to construct the sustainable future that we seek. But he believes we should build those models now.

The LBC encourages us to think about how the act of designing and constructing might lead to a world where buildings actually regenerate. For example, an LBC building must create 105 percent of its annual energy, on site and without combustion. It must have closed-loop, net-positive water systems. Every material must be free from "Red List" chemicals, such as cadmium, PVC, and formaldehyde. Performance must be verified with 12 months of collected data. An LBC building must consider the uniqueness of its place, use biophilic design principles that connect to nature, consider equity, and even seek beauty.

The challenge seems audacious, but that's what makes it inspiring. Breaking it into smaller pieces makes it easier to grasp. Each of these pieces has permanently changed the way I think about building design.

PLACE: Buildings should relate to the human scale, be rooted to their place, and connect to the stories and people that surround them.

ENERGY: Net-positive energy is pivoting toward the mainstream, with available technology. The number of net-zero buildings or buildings working toward net-zero has increased 700 percent since 2012, according to the New Building Institute.

WATER: Closed-loop water systems draw only from the rain falling within the bounds of their sites, recapture nutrients from waste, and return the leftover water back into the air or ground.

HEALTH AND HAPPINESS: Humans spend most of their time in buildings. Buildings should respect their occupants, surrounding them with light, air, and connections to nature.

MATERIALS: Our choices as designers can support industries and manufacturers that are at the leading edge of safe materials. McLennan puts it succinctly: "Instead of specifying materials that might give you cancer, let's choose ones that can't." There is far-reaching power behind the material-transparency movement: if manufacturers aren't making products with toxic chemicals,



then their workers and the surrounding community won't be exposed to those toxins. On top of that, we can choose materials sourced close to the site, helping local economies.

EQUITY: I am encouraged by the power and volume in the movement for greater equity, diversity, and inclusion in architecture. The LBC calls on us to start in our own practices, soliciting and cultivating more diverse points of view, and designing buildings that do the same.

BEAUTY: The LBC does not attempt to define beauty—that's too subjective. Instead, it encourages designers to think and write about what they think will make their project beautiful—and then asks them to talk to occupants to see if the design was successful. Beautiful buildings make our world better and encourage us to care more—about our spaces, our environment, and the people who share them.

McLennan intentionally launched the first version of the LBC when it was "three-quarters baked," imperfect and with some limitations. For example, the LBC has been successful at only a certain scale thus far. The first wave of buildings to be certified were environmental centers on unconstrained, rural sites. The next wave included "normal" buildings—the six-story Bullitt Center office building in downtown Seattle and the R.W. Kern Center, a 17,000-square-foot campus building at Hampshire College. The third wave is likely to take it to the next scale—a 40,000-square-foot Kendeda Building at Georgia Tech is under construction, and a 130,000-square-foot Residential Village is under design for Yale's Divinity School. Now a Living Community Challenge is emerging to consider applying LBC principles at the community scale and in urban settings.

Requirements sometimes overlap and trade-offs must be made. When our team could not find plywood that was free of red-list chemicals, sourced close to our site, and FSC certified, we sought an exception, complying with the requirement we thought worked toward the most positive change. We chose red-list-free sustainably harvested plywood sourced in the Southeast. The impact of material toxins on workers and occupants and responsible forest management took precedence over transportation energy and supporting the regional economy.

Obviously, not every building can be a Living Building, but the philosophy can guide us. The LBC challenges designers to smash through our preconceptions and reframe what we do in the positive. What does good look like to you? ■

JASON FORNEY AIA is a principal with Bruner/Cott & Associates in Cambridge, Massachusetts. He focuses on deep green design, including new high-performance architecture and the creative transformation of existing buildings.

ABOVE
First lift, last lift, 2016; gesso, acrylic, graphite, enamel on panel, 51 × 61 cm.



Past is prologue

VERNACULAR TRADITIONS EMBODY AN IRANIAN PROJECT

by Alykhan Mohamed

The dizzying pace of global development can flatten cultural differences in even the most remote villages of the world. Whether designing colonial houses in New England or creating a major public space in one of Cairo's oldest neighborhoods, architects today are often asked to reference the past while accommodating contemporary lifestyles. How can respect for local traditions lead to better design for modern communities?

The 40 Knots House in Tehran, designed by Habibeh Madjdabadi and Alireza Mashhadi Mirza, is an inspiring example of how a deliberate approach can build on vernacular traditions while solving challenges specific to a modern capital city. The Iranian project infused perhaps the most typical contemporary urban typology—the mid-rise apartment block—with elements drawn from a centuries-old tradition of Persian and Islamic architecture.

As 20th-century cities were transformed by urban migration, the industrial revolution, and global capitalism, building traditions that had evolved as sophisticated responses to local topography and culture were replaced by Haussmann-inspired boulevards; the steel, concrete, and glass of the International Style; and the standardized floor plates of multinational corporations.

Tehran, a city whose rich architectural traditions span several thousand years, has suffered from such a break in tradition. "It's essential that the heritage of a people be preserved," said Richard Frye, former Aga Khan Professor of Iranian Studies and founder of Harvard's Center for Middle Eastern Studies, at a Library of Congress conference on Islamic culture. "If Walmart came to Isfahan, what would happen to the bazaar?"

For Madjdabadi and Mirza, two Iranian-born architects, the need to conform to a small rectangular plot and develop 10 residential units that were affordable for Tehran's "missing middle"—the range of residents who struggle to find market-rate housing but are not eligible for social housing—meant that any nod to traditional architecture had to be an integral part of their design rather than a luxury or embellishment.

The façade, a defining feature of the 40 Knots House, seamlessly combines two central aspects of Persian and Arabic traditions: the mashrabiyya (an elegantly carved screened window) and the Persian tradition of carpet weaving. Rather than simply copying the wooden latticework of a traditional mashrabiyya, Madjdabadi and Mirza developed a simple pattern of interwoven bricks that stretched across the entire façade, defining windows and balconies. As well as being an essential aspect of traditional Iranian architecture, brick is one of the cheapest materials available locally, and the intricate pattern provides privacy while allowing air to flow through each apartment.

The architects worked with local laborers to draw on a system that has been used in textile workshops for generations, where one artisan reads instructions and another lays the bricks. "The one who reads the instruction does not necessarily know how to knit," the architects told ArchDaily. "She reads the instructions, usually with a rhythm, and like a song: two reds, a yellow below, two blue…those instructions are usually drawn on checkered papers."

The practical elegance of the 40 Knots House earned its designers a nomination for the Aga Khan Award for Architecture, an institution that recognizes designs that respond to the needs and aspirations of contemporary Islamic societies, while drawing on local traditions and materials. Rather than simply referencing an aesthetic, the architects facilitated the evolution of a vernacular tradition to fit a contemporary urban context and create a bridge between the past and the present. ■

ALYKHAN MOHAMED is an urban planner at Sasaki. His experience working with informal communities in South Asia inspires his thinking about vernacular design in a global context.

LEFT
Detail of *Aiguille du Midi*, 2013; screenprint, gesso, and enamel on panel, 22 × 30.8 cm.

The little campus that could

COMMUNITY AND CONTEXT IN MEMPHIS

by Emily Grandstaff-Rice FAIA



It is no secret that the profession of architecture has a way to go to reflect the gender, ethnic, and racial composition of the United States, circa 2018. The percentage of African-American licensed architects has remained woefully low at almost 2 percent, whereas the most recent census counts African Americans at 12 percent of the population.

Despite this bleak picture, some schools are dedicated to developing architects from underrepresented populations. The seven accredited Historically Black Colleges and Universities educate 43 percent of all African-American architecture graduates. As licensed professionals, architects bank on the high standards of education, training, and public responsibility, yet we often fail to serve communities that don't have access to professional design.

In 1987, the firm of Venturi, Rauch, and Scott Brown developed a new masterplan for the city of Memphis, Tennessee, that included establishing a local accredited architecture program to better serve the city through professional design services. Through their work on the Center City Development Corporation, the principals observed a rich fabric of cultural patterns in the city. With its unique mix of African-American culture, stories, Elvis, the Mississippi River, and historic cobblestones, downtown Memphis was at a crossroads on issues of equity, place, and the public realm—as well as where to invest its time and funding. Fast-forward 30 years, and few of the ideas included in the plans were formally adopted. Rather, "the ambitious and impressive plan was largely ignored," according to Tom Jones of Smart City Memphis—except for the plan to develop future design talent in and for the city.

Enter the University of Memphis, the little school that could. In 2003, after an independent peer review of the school's architecture courses, work began toward building an accredited graduate degree. In 2015, the program gained accreditation. Through the support of the university leadership, local architecture community, some key developers, and major donors to the program, the program has become known for its community-based curriculum, recruiting students who better reflect the race and ethnic population of the city. Since the only other public option for students was more than 500 miles away, the University of Memphis addressed a specific need. Although masterplans rarely cite the future training of designers, this key addition acknowledged that to fix a city, human capital can be just as powerful as built structures.

The true success of the program is that more than half of the architecture students and graduates are from under-represented races and ethnicities, such as Mario Walker, Class of 2012, who has been working at Self+Tucker Architects in Memphis on everything from neighborhood planning and streetscape development to all ranges of housing and mixed-use development.

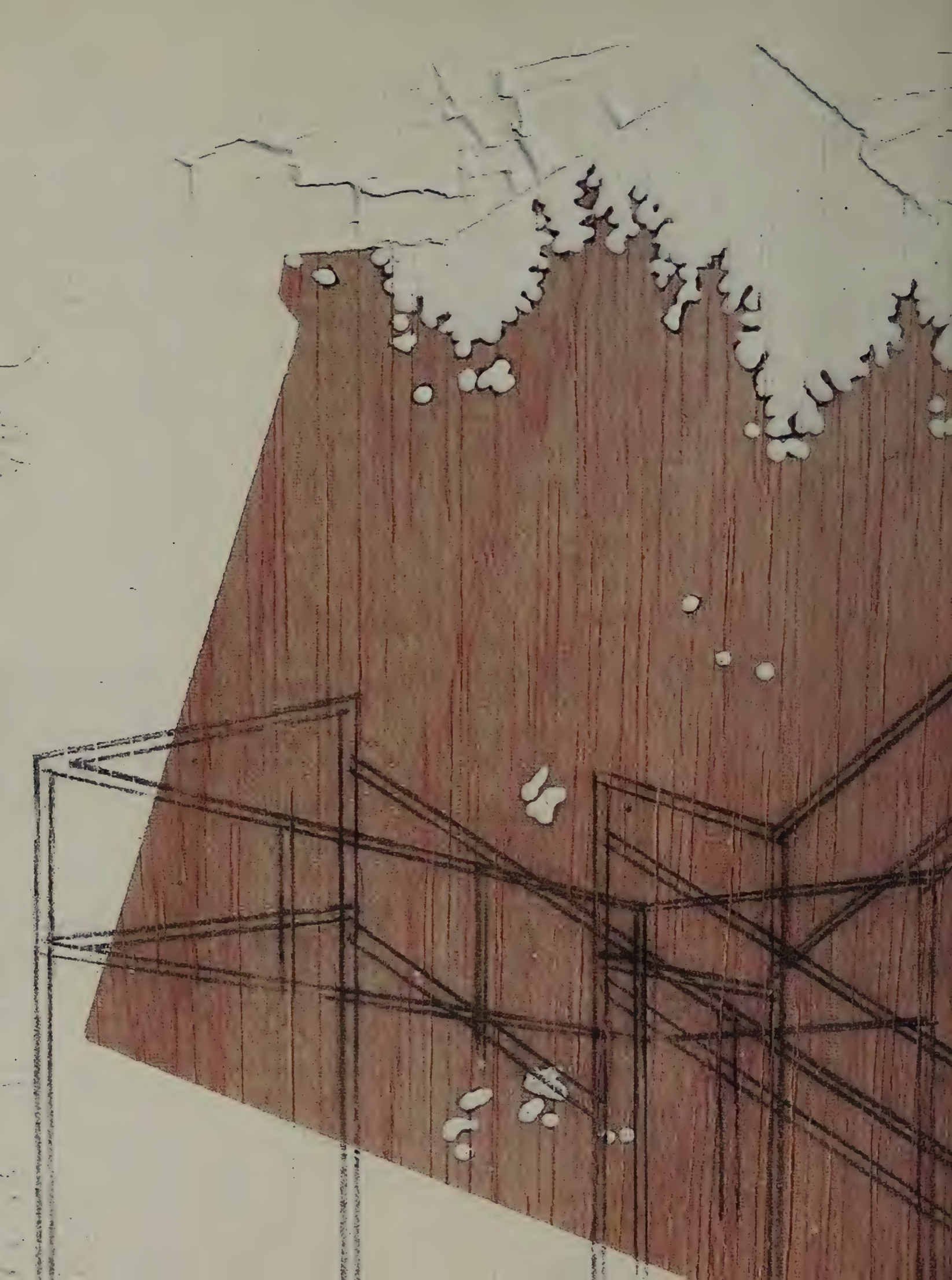
Such results take dedicated work, but the future success of the school's graduates and the impact of their vision on the city of Memphis is shaped by their collective energy, cultural awareness, and commitment to community-based projects.

American towns and cities consist of layers of history, with scars and fissures sometimes left open for decades. We continue to struggle with systematic governmental policies leading to de facto segregation that date back at least to the New Deal, with urban-renewal divisions that cannot be easily stitched back together. The key to creating new vision for our cities is to acknowledge that architects and planners need to bring more people who are rooted in their communities to the drawing table, people whose voices society clearly has not yet heard. ■



EMILY GRANDSTAFF-RICE FAIA, a senior associate at Arrowstreet, was elected at-large director of the American Institute of Architects for 2018–2020.

LEFT
Detail of untitled collage; mixed media.



The golden rule

STUDENTS REVISE THE SOCIAL CONTRACT

by Thomas Fisher ASSOC. AIA

Two of the most important ideas in ethics are empathy and reciprocity: understanding the world from the perspective of others and treating others as you would want them to treat you. Twentieth-century architecture failed on both counts. It showed little empathy, with its universalist assumption that there existed an "International Style" independent of the culture or climate of a place; and practiced little reciprocity, with its utopian urge to impose singular urban visions on vulnerable populations, be they Le Corbusier's Plan Voisin or Albert Speer's Third-Reich Berlin.

But 21st-century architecture has taken an ethical turn, one that has become most apparent in architecture schools. Ethics has become an expected part of every accredited school's curriculum as part of the student performance criteria around professional practice, and the ethical questions raised by students' design work do get discussed in studio reviews more than they did decades ago. What seems missing in many schools is a rigorous discussion of ethics itself and how its many facets—environmental ethics, feminist ethics, business ethics—might affect architectural design as well as practice.

Also missing in most schools is a discussion of the ethics of higher education, where the social contract between faculty and students has changed dramatically. Digital media has prompted this change, letting students get information faster—and sometimes more accurately—than faculty can give it. And with that has come a move away from a hierarchical, one-way delivery of information to an egalitarian, two-way discovery of knowledge, in which faculty members have as much to learn from their students as the other way around and have learned to treat students with the respect that they deserve.

This is not just a technological shift but an ethical one, with empathy and reciprocity at its core. Not all faculty, however, have recognized or accepted this. The academy rewards contrarians and some, especially older professors, continue to teach as they were taught, droning on in the front of a lecture hall or placing unreasonable demands in a design studio. But such faculty no longer get away with it; these teachers get called out on sites such as ratemyprofessors.com and soon discover that no one wants to take their courses; the ethical turn has consequences for those who ignore it. Think of this as reciprocity's revenge: Those who treat others badly get treated badly themselves.

The youngest members of the profession are also helping to chart a new course by steering architecture toward exploring new forms of public-interest and pro bono practices. If you look at the student work in a school like mine, most projects have a deeply ethical and environmental character, taking on some of the biggest challenges of our time. This generation of students and recent graduates will not simply accept traditional forms of practice or 20th-century ways of thinking. Firms that do not have a sympathetic grasp of this ethical turn—or that refuse to change their practices in response to it—will not thrive, however successful they may be at the moment.

At the same time, the demand for and interest in design among other disciplines has never been greater. At my university, fields as diverse as business and public policy, nursing and public health, anthropology and kinesiology have taken an active interest in design, embracing it in their classes and on their research teams. Design appeals to them not for aesthetic reasons, but ethical ones. They see design—perhaps even more clearly than many designers—as an empathy-driven, paradigm-shifting, action-oriented way of working that our rapidly changing world needs now more than ever.

That signals one of the greatest impacts the ethical turn may have on architecture. Long defined by the outcomes of its practice—buildings—the profession has entered an era in which the ways in which designers work may matter just as much or even more than what form that work ultimately takes. Architects will still design buildings in the future, but just as many will design systems and services that have a physical or spatial component. An empathetic understanding of what people really need will make that change almost unavoidable, and a reciprocal sense of responsibility for others will make it highly desirable—and an enviable outcome for the profession. ■

THOMAS FISHER ASSOC. AIA is a professor in the School of Architecture at the University of Minnesota. His third book on architecture and ethics will be published by Routledge this year.

LEFT
Detail of *Untitled*; 2013; gesso, acrylic, graphite, enamel, resin on panel, 14.8 × 19 cm.

Failure is an option

THE VALUE OF ADMITTING ERROR

by Justin Crane AIA

Architects are understandably leery about admitting mistakes; we also avoid sharing our hard-learned lessons with other practitioners. This is to the detriment of our clients, the general public, and our own practices because it keeps hidden the very information that would help us improve individually and as a profession.

One of the first lessons of contract administration is to not admit fault or liability, lest we provide an easy case for a claim or compromise our insurance coverage. In this time, place, and industry where litigation is as important as budget and gravity, careful wording can be a valuable skill.

Yet forums for sharing our experiences with missteps in building design are so limited, the lack poses an ethical hazard for our profession. As the American Institute of Architect's Code of Ethics states, we should contribute to the growth of the art and science of architecture; we are responsible in our designs for the health, safety, and welfare of the public; we should also serve the public interest in our professional activities. Keeping a secret of lessons learned is not in the spirit of any of these aspirations.

For example, the industry may benefit from knowing why the San Francisco Millennium Tower has sunk 17 inches (and counting) since it opened in 2008. What technical errors, missing link in the quality-assurance/quality-control chain, or series of oversights should we avoid on future projects—within our offices, in correspondence with our consultants, or during contract administration? Unfortunately, we may never know, as the project is in the midst of a legal battle that will likely end with a confidentiality agreement. With legal technicalities effectively placing a gag order on the parties involved, how do those involved ensure similar mistakes are not repeated and pass along related knowledge in light of our ethical obligations to improve the profession?

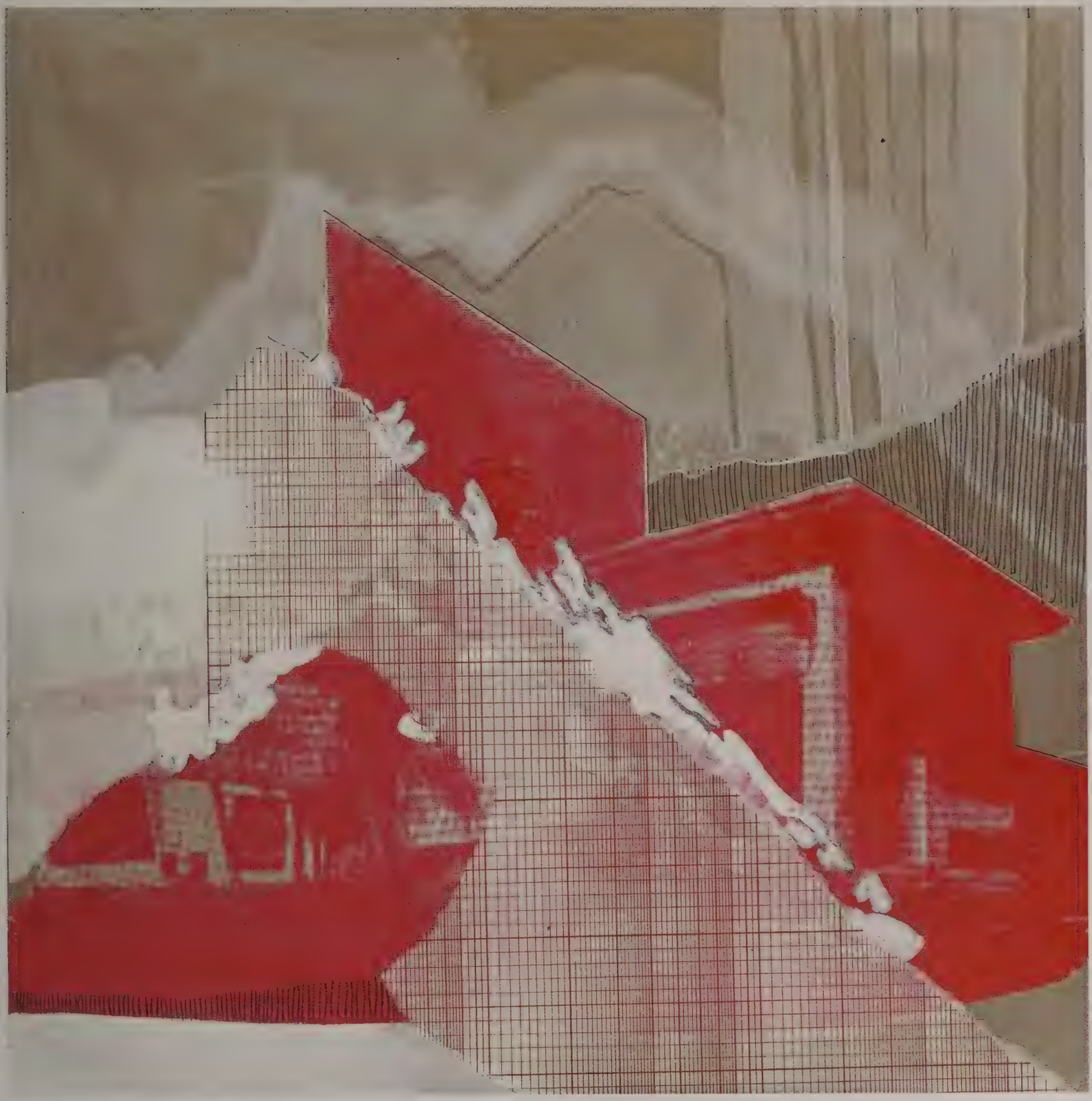
The current demographics of the industry exacerbate our problem. During the Great Recession, unemployment for architects aged 22–26 was 4 percent higher than for older professionals. Many of these unemployed emerging practitioners left architecture. Were they working today, they would be the ones still junior enough to be directly involved in the technical details of projects but with enough experience to understand circumstances that may lead to bigger problems.

While this critical link for passage of knowledge from senior to junior staff is frequently missing, there are only sporadic alternative forums for sharing critical technical information. Conference presentations on lessons learned are effective only if firms are willing to air their dirty laundry. More frequent is information received from product representatives, a firm's lawyer, or consultants willing to speak of their experiences on other projects. But this information is shared only informally and occasionally.

An exceptional example of such shared knowledge comes from an article in *Architect* magazine's November 2017 issue, which described Kieran Timberlake's attempts to design its new studio without air-conditioning. The article is frank about the firm's failure to create a comfortable working environment, and the results are instructive for us all. Of course, Kieran Timberlake experimented on themselves, perhaps the most ethical way for architects to try new technologies.

Finally, there is also at least one insurance company, XL Catlin, that runs a risk-control organization called Design Professionals Risk Control Group (DPRCG). Membership in the group provides access to workshops, an annual convocation, and case studies. However, DPRCG works because it is open only to a select group of architectural and engineering firms deemed by the insurance company as being "high quality" and "well managed." In other words, the participating firms' reputations are shielded despite their willingness to share missteps with others in the industry. But this does little for those firms that are not currently deemed "high quality" or those using a different insurance carrier.

What can change? Local AIA chapters could regularly convene select groups of firms to share stories and anonymously publish lessons learned. Insurers or law firms serving the profession should make a point of collecting and distributing best practices with their clients' permission, while preserving confidentiality. Finally, the AIA has started an important, but as of yet little-known, Risk Management Program dedicated to creating educational materials for



firms without the resources of a full-fledged risk management team or in-house legal counsel. The program should outline the parameters of errors and oversights most likely to have an effect on public health, thus being worthy of case studies. Member firms of the AIA could agree to have such cases published, with all telling details obscured, as the AIA National Ethics Council does with its own decisions.

We all hate to admit mistakes. However, as a vocation given the exclusive right to design buildings in such a way that they promote health, safety, and welfare, we owe it to our profession, our clients, and the general public to allow others to learn from our missteps. ■

JUSTIN CRANE AIA is a senior associate at Cambridge Seven Associates and a member of the American Institute of Architects' National Ethics Council.

ABOVE
Untitled collage; mixed media.

WE ASKED DESIGN PROFESSIONALS AT VARIOUS STAGES OF THEIR CAREERS TO REACT TO ONE SEGMENT OF CANON 1 OF THE AIA CODE OF ETHICS

CODED LANGUAGE

Canon I

GENERAL OBLIGATIONS

Members should maintain and advance their knowledge of the art and science of architecture, respect the body of architectural accomplishment, contribute to its growth, thoughtfully consider the social and environmental impact of their professional activities, and exercise learned and uncompromised professional judgment.

E.S. 1.1

Knowledge and Skill: Members should strive to improve their professional knowledge and skill.

> **It is our responsibility to serve the public interest. Because this cannot be done without understanding the needs of urban dwellers of all walks of life, we should foster community engagement and collaboration as a critical part of a designer's education and skill set. Buildings are not stand-alone pieces of art, but living, breathing pieces of our urban centers. Learning to craft shared visions, build consensus, and collect and incorporate feedback is critical to the success of most projects. It is not only the right thing to do, but the smart thing. With the benefit of community stewardship and creativity, buildings and public spaces can reflect, engage, and inspire those they serve through education and culture.**
>
> **JULIA MCELHINNEY** is an urban design consultant at CBT Architects.

RULE 1.101

In practicing architecture, Members shall demonstrate a consistent pattern of reasonable care and competence, and shall apply the technical knowledge and skill which is ordinarily applied by architects of good standing practicing in the same locality.

E.S. 1.2

Standards of Excellence: Members should continually seek to raise the standards of aesthetic excellence, architectural education, research, training, and practice.

E.S. 1.3

Natural and Cultural Heritage: Members should respect and help conserve their natural and cultural heritage while striving to improve the environment and the quality of life within it.

Context is so critical to architecture. Clients often view context through the lens of what physically surrounds a site. It's our responsibility to show them how deep context goes, especially as it relates to the cultural and social dynamics that make a community distinct, and the environmental implications associated with architecture. The profession needs to get to a point where designing for context isn't viewed as an option or add-on. It needs to be the only way we design.

LYNNE DENINGER AIA is a principal at CannonDesign.

E.S. 1.4

Human Rights: Members should uphold human rights in all their professional endeavors.

RULE 1.401

Members shall not discriminate in their professional activities on the basis of race, religion, gender, national origin, age, disability, or sexual orientation.

Winston Churchill famously said, "We shape our buildings, thereafter they shape us." In no place is this more critical and relevant than in the area of equity, diversity, and inclusion. The code requires members not to discriminate. However, architects must be more than passive nonoffenders. They must be active promoters of diversity within their firms and project teams. A diverse team brings a wide range of perspectives, which are in turn reflected in the ultimate design. A design born from a single perspective will serve to reinforce that perspective in society. Likewise, a design born of diverse perspectives will foster a community that values that diversity.

SAM BATCHELOR AIA is a partner at designLAB architects.

This rule references the applicable federal civil rights laws barring discrimination. What the Code fails to do is to contextualize this overarching statement to actionable steps to ensure an equitable workplace. Implicit biases are often overlooked in the workplace. When we work in an environment, we bring with us many preconceived ideas about ethnic groups other than our own. So the most important thing is to discuss the following: How do we create an office culture where we can first just acknowledge the powers at play? Who makes decisions in the office? Which groups are—and never are—at the table? How do we first assess the situation to create a more inclusive environment?

HANSY BETTER BARRAZA AIA is a principal at Studio Luz Architects.

Architecture is a profession that influences and fosters social interaction, response, and behavior. The physical artifact that we produce and the accompanying social engagement that architecture generates provide a direct link between professional practice and interpersonal activities. An example to recognize that connection and to strengthen the Code of Ethics would be to edit E.S. 1.4 with "... all their professional *and personal* endeavors," and its associated Rule with "...in their professional *and personal* activities." Uncivilized behavior of any kind is not tolerated outside the workplace, including: racial and sexual harassment; verbal, physical, and online intimidation; and violence of any kind. It seems appropriate to more strongly link that intolerance to professional conduct.

LAWRENCE A. CHAN FAIA is the cofounder and former president of Chan Krieger & Associates.

E.S. 1.5

Design for Human Dignity and the Health, Safety, and Welfare of the Public: Members should employ their professional knowledge and skill to design buildings and spaces that will enhance and facilitate human dignity and the health, safety, and welfare of the individual and the public.

E.S. 1.6

Allied Arts and Industries: Members should promote allied arts and contribute to the knowledge and capability of the building industries as a whole.



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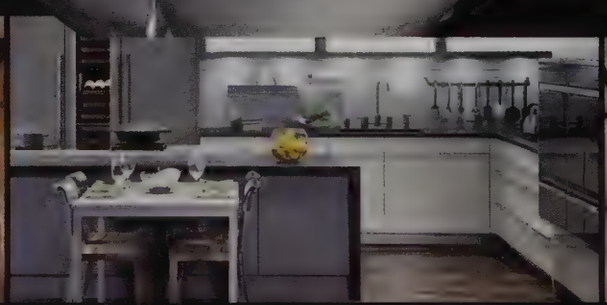
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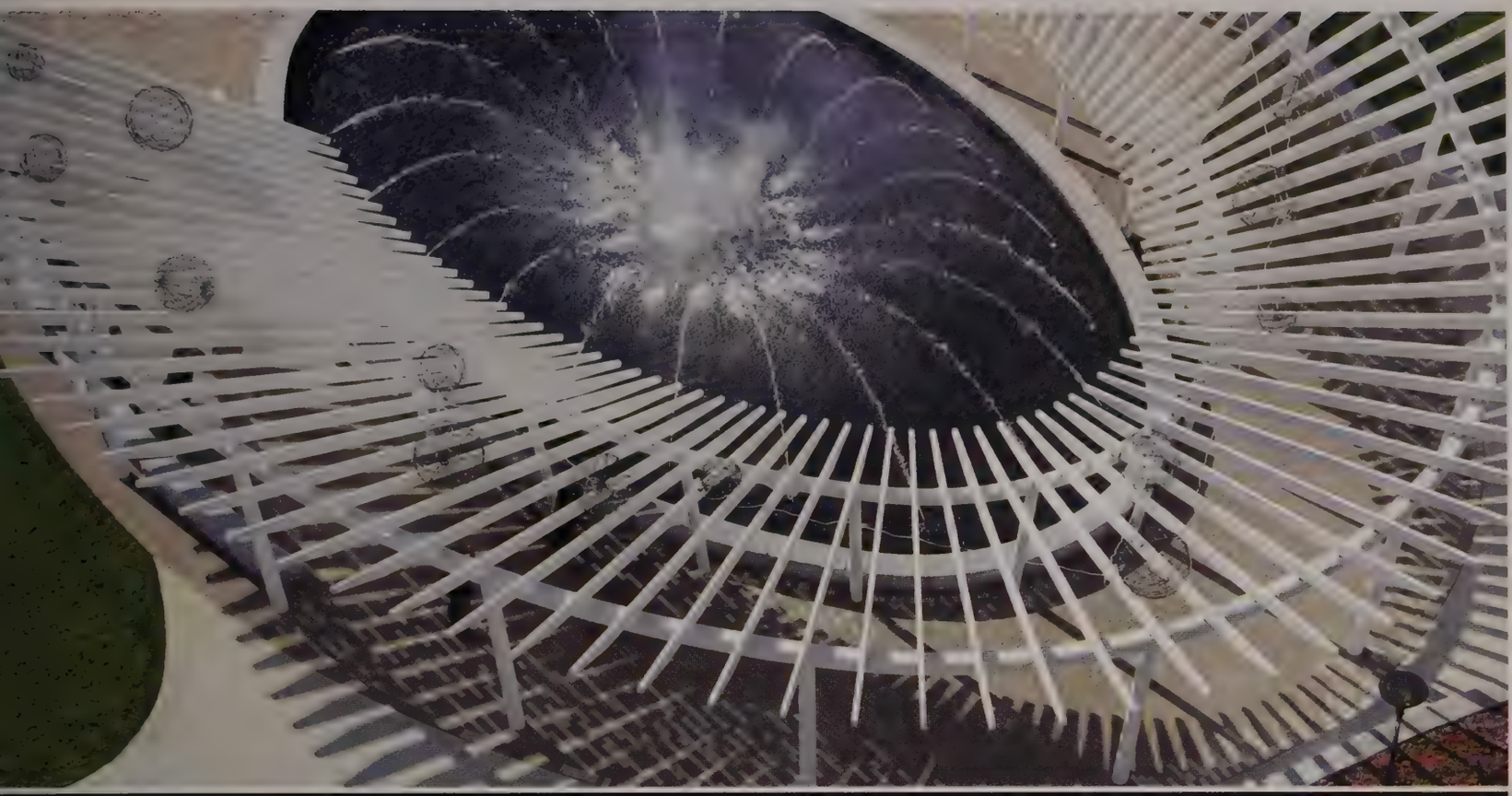
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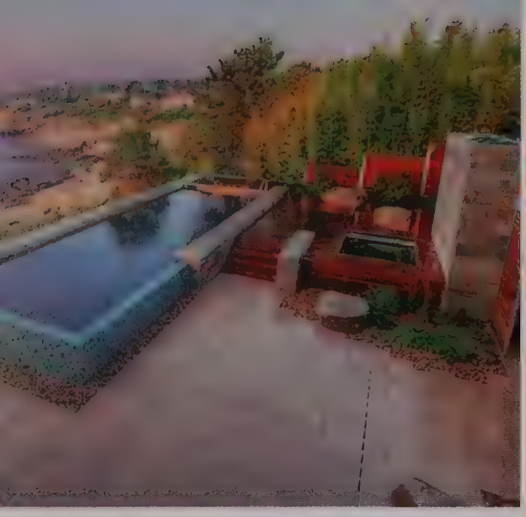
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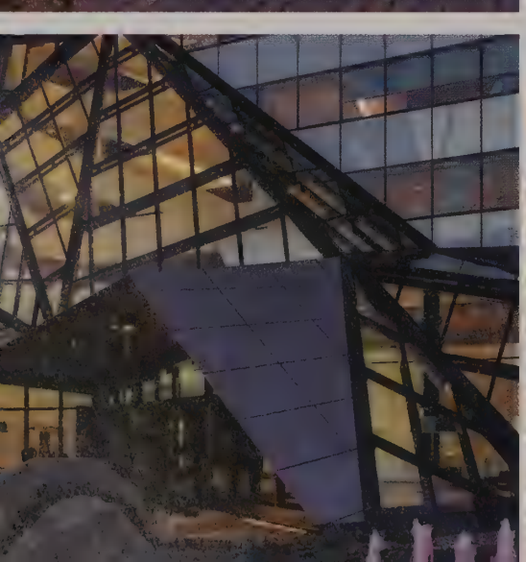
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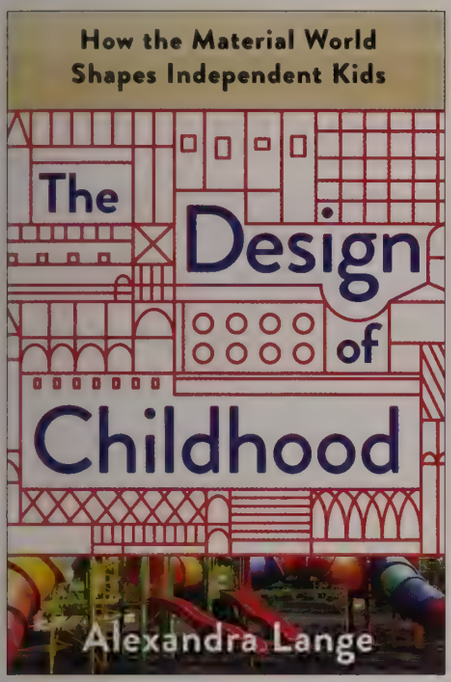







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BOOKS



The Design of Childhood: How the Material World Shapes Independent Kids
Alexandra Lange
Bloomsbury Publishing, 2018
Reviewed by Polly Carpenter FAIA

One of my favorite resources both in my work with children and as a parent is a book about building with cardboard castoffs called *Kitchen Carton Crafts*. It was written in the heyday of the progressive movement of the 1960s and fits into the open-ended, experimental, creative educational theories of the time. The cardboard box gets top billing in Alexandra Lange's new book *The Design of Childhood* and for good reason. It is the perfect child's toy: in, out, under, on—the box can be an object, an ecosystem, or an imaginary friend. It is adaptable at multiple scales and is recyclable. And yet a box is not designed to be a toy. It is the child, by modifying the box—either physically or metaphorically with a story—who designs both toy and experience.

Do children need design at all? Lange, an architecture and design critic who started considering children's spaces after having a child of her own, suggests we are at a turning point in our attitudes about the effects of the designed world on the health, well-being, and behavior of children and adults. As Americans pour through visual images on Instagram, Pinterest, and Houzz to bury themselves in even more stuff, design has become a commodity for economic transactions that treat children as consumers rather than as citizens. Without positive design intervention, Lange writes, "our built environment is making kids less healthy, less independent, and less imaginative."

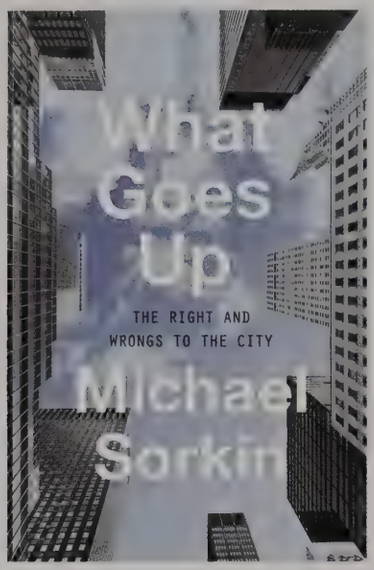
The book progresses in scale from Froebel blocks to urban design. Each chapter ("Toys," "Home," "School," "Playground," "City") begins with an excerpt from a children's book. Lange devotes the longest chapter to School (where children spend the majority of their waking hours). The chapter tracks school design throughout American history, beginning with Laura Ingalls Wilder's one-room schoolhouse for rote memorization, progressing through John Dewey's child-centered philosophy and the design of Crow Island, and closing with a Silicon Valley educational start-up. One quibble I have with this otherwise informative and satisfying book is with the black-and-white illustrations. I found myself searching on Google to access more images, especially to clarify Lange's descriptions of the effects of color on design.

Lange does not shy from examining racial inequity in the world of design for children. From the institutionalized racism prevalent in subsidized housing to hand-me-down schools that were reassigned to black communities, Lange points out that bias was inherent in the design process and that some of the K–12 ideas she highlights were "practiced on white children first."

The evolution of classroom design (as well as of object, space, and street) reveals a sometimes tense but always shifting balance among parental, social, and educational interests in prescribing children's level of participation, freedom, and safety in the world. In questioning the power and potential of design for children, Lange is not dogmatic, though she expresses opinions about where she sees design headed. Wouldn't the educational start-up AltSchool's funding be more beneficial in creating school architecture than in providing apps in every classroom?

As the title of the book implies, adults have a complicated relationship with their offspring. Do adults design childhood? Lange makes a good argument for the answer to be yes, and her book ends on an optimistic note. She believes that we are on the cusp of the next progressive movement, with discussions of risk on the playground and children of all ages looking for fun in their cities. Perhaps those Amazon boxes on every doorstep will launch the next generation of independent, creative, and fun-loving citizens.

POLLY CARPENTER FAIA is director of public programs at the Boston Society of Architects/AIA.



What Goes Up: The Right and Wrongs to the City
Michael Sorkin
Verso, 2018
Reviewed by Elizabeth Donoff

It takes a keen eye to observe the idiosyncratic nature of the city and translate that experience to the written page, but that is what Michael Sorkin has been doing his entire career as an architect, urbanist, educator, and critic. His ability to decipher the nuances of the urban condition is on full display in his latest volume, *What Goes Up*. Those already familiar with Sorkin's no-holds-barred approach to commentary will not be disappointed. For those new to his thought-provoking analysis, it might be a bumpy, though worthwhile, ride. These 40-plus essays—a selection of his writings from 2010 to the present—cover a wide range of topics, from maintaining affordability in the city to the impact of climate change, and provide a snapshot of the social, economic, and political threads that have contributed to our current architectural and urban conditions.

A lifelong New Yorker, Sorkin started his career as the architecture critic for the *Village Voice*, so it's no surprise that the book is divided into two sections: New York, New York, New York; and Elsewhere and Otherwise. At his best when he's discussing his hometown, Sorkin has an acute awareness about the city because of his daily experiences in Manhattan, witnessing its dynamic evolution, for better or worse.

Sorkin's goal, no doubt, is to attract a broader readership than his typically architecturally focused audience. His work is rooted in an intellectual tradition of critical writing and analysis, and he builds on the legacy of such notable writers as urban advocate Jane Jacobs and architecture critic Ada Louise Huxtable.

Reading Sorkin's work requires the reader's full engagement. Through masterful language and sentence crafting, he weaves together complex ideas, such as the role media and new technologies play in our digital age and their impact on privacy issues, as well as the new context this sets up for the creation of architecture and public space.

Underlying his work is the notion of the city as a democratic entity. Essay after essay, Sorkin questions how democracy can be maintained amid global turmoil. Indeed, the role of the architecture critic has taken on new import in the current political landscape, and it's an issue Sorkin grapples with in assessing his own work and the practice of architectural criticism in general. Ultimately it's about navigating from architectural concept to built reality.

As a graduate architecture student at Washington University in St. Louis in 1993, I had the good fortune to experience Sorkin's working process when he served as visiting critic in a studio titled "The Exquisite Corpse: The Design of a City." He assigned the studio to collectively, in just seven weeks, create a city, an exercise meant to challenge our ideas about what a city *is*. Drawing inspiration from real and imagined places, we developed individual "neighborhoods," which we then combined to create a new city. The exploration provided a foundation for understanding the urban condition.

Whether discussing the rebuilding of Lower Manhattan and the Ground Zero site, the response of city and government officials to natural disasters such as Superstorm Sandy, or even the critically charged situation in Gaza, Sorkin applies the same direct and demanding questioning of the social and political constructs that shape our world. He never backs down from addressing an issue even if his viewpoint is an unpopular one. The need for a critical voice has never been more important. Witness, chronicler, and analyst, Sorkin provides a framework in his writing for critical evaluation of the architectural process and works to ensure that the city remains a place for people.

ELIZABETH DONOFF is an editor and writer based in Washington, DC. She was editor-in-chief of *Architectural Lighting* magazine from 2011 to 2017 and now serves as editor-at-large.



101 Things I Learned in Urban Design School
Matthew Frederick and Vikas Mehta
Three Rivers Press, 2018
Reviewed by Meera Deean

What is the magic calculus that creates a vibrant, thriving city? How can urban designers and architects give form and character to buildings, whole neighborhoods, and cities? How can we shape the spaces in between buildings—the public realm—to be inclusive, accessible, and well designed? And how does the built environment reinforce, embody, or change the social order and our culture at large? As hard as it is to describe what an architect does, it can be even harder to describe what an urban designer does. She or he must be part visionary, part advocate for good design across scales, and part savvy navigator of regulations and competing interests.

Maybe this is why Matthew Frederick and Vikas Mehta have chosen to offer 101 rules, principles, and pearls of wisdom for designing cities. Part of the now-ubiquitous 101 Things I Learned series, this latest book applies the formula of short, pithy dictums paired with

illustrations to urban design. In the preface the authors give this disclaimer: "No doubt, universal principles apply to all urban places. But each place is unique in ways that make it rooted, authentic, and beloved. This is why urban design cannot be taught linearly."

Indeed, the 101 mini-lessons flow in no particular order, and numerous illustrations—including of Boston-area sites such as Post Office Square and the Hingham Shipyard—provide specific applications of the principles. The authors' advice ranges from the proper height for seat benches to accepting that good design is more likely to happen if someone can profit from it. At moments the book evokes Christopher Alexander's *A Pattern Language*; at other times, it reads like aphorisms from a TED Talk; and yet at other times, it is reminiscent of desk crits in school.

The 101 mini-lessons may suit our current era of designing cities, where the "top-down" approach is a no-no and the "bottom-up" model too often results in one-offs. The challenge of urban design is to create a physical framework that supports vibrant communities today and gives cities room for the inevitable change—physical, social, demographic, and technological—that occurs over time. We constantly tweak and try different tactics to achieve the optimal balance for a given time, place, and people, and the 101 mini-lessons offer a range of tactics.

Perhaps most important, the authors use jargon-free language. They demystify urban design practice. Why is this so important? Designers all too often resort to abstruse terms and obscure references, which may work in academia but can fall flat with community members, developers, or public officials.

As cities grow, tensions arise over public space and who has access to our cities and their many resources—as evidenced in many neighborhoods in Boston. Poorly designed cities and neighborhoods can rob us of our well-being and, in the long term, access to opportunity. The more that we can democratize the lessons of urban design, the more effectively we can create a culture of stewardship of, advocacy for, and shared investment in our public spaces and cities.

The book is not for the seasoned designer, who would learn little new and might disagree with some of the lessons, as I did. But it does offer a good reminder that much of what we, as designers, take as self-evident can be new to those not steeped in urban design and that complex concepts can be communicated in a clear, concise way. For the person who explores cities on weekends, the budding city planner, or the individual just curious about urban design, the book offers a simplified range of lessons and principles.

MEERA DEEAN is Boston Harbor Now's director of planning.





WHEN TO SAY NO

by Daniel Perruzzi AIA

There's nothing quite so clarifying as the unequivocal opinion of a clear-minded teenager. Years ago, sitting at our dinner table, my 14-year-old daughter listened to me describe a project that my firm was bidding on and might potentially be awarded. Her response was bracing.

For years, our firm had been wooing this client, one who did not fit our typical profile. The chase was all about proving that we would be a great fit because we had designed similar projects for other clients. Our firm was finally granted an opportunity to propose renovations to a building with laboratory and office space. Despite the short schedule, low budget, and challenging conditions (the building was a difficult space in which to work), we were eager to prove our value.

During a tour of the site, we came upon row upon row of animals in cages. Labs keep animals in cages for one reason only.

Years before, my partner and I had discussed what we didn't want to design: Prisons. Private homes ("marriage counseling," in my mind). We never spoke of animal testing. Throughout my career, the projects I'd been involved with focused on basic life activities—work, learning, commerce. This was death, and its presence was chilling.

Proponents of animal testing would argue that it saves human lives. I couldn't get past its cloak of death.

The prospect of designing an animal-testing lab touched off a debate in our office. Since we had never designed such a facility, some cited practical considerations for staying away from the project. Others cynically offered: "Someone else will do it if we don't." Many of our staff asked us to drop out of the running; they made clear that if we remained in contention and were successful, they could not in good conscience work on the project. Their passion was real, and it was compelling.

I began to think about the implications of removing the firm from contention. Would it put us at a disadvantage for future work? When you refuse a project, do clients come back? Was it a hollow gesture? Would doing so change anything?

We decided to pull out of the competition without issuing any grand statements. Nor did we try to make a larger point about the ethical treatment of animals. The project was ultimately designed by another firm. It would be a decade before we were awarded a project with this client, and this time, there was no animal testing. There were no rewards for what we did, nor should there be.

But I will always recall the talk around the family dinner table during that time, conversations with my children that revolved around our own dog and all the animals we loved. I also had silent inner conversations about the many ways humans are cruel to animals; wondering if society would one day be able to consider animal testing as a barbaric relic, unnecessary and hopelessly archaic. Most of all, I'll never forget my daughter's voice stating simply, quietly, and clearly: "You're not going to do this, are you, Dad?" ■

DANIEL PERRUZZI AIA is principal and senior partner of Margulies Perruzzi Architects and treasurer of the BSA.

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Come Out of the Shadow, 2014, digital collage by Tyler Spangler.

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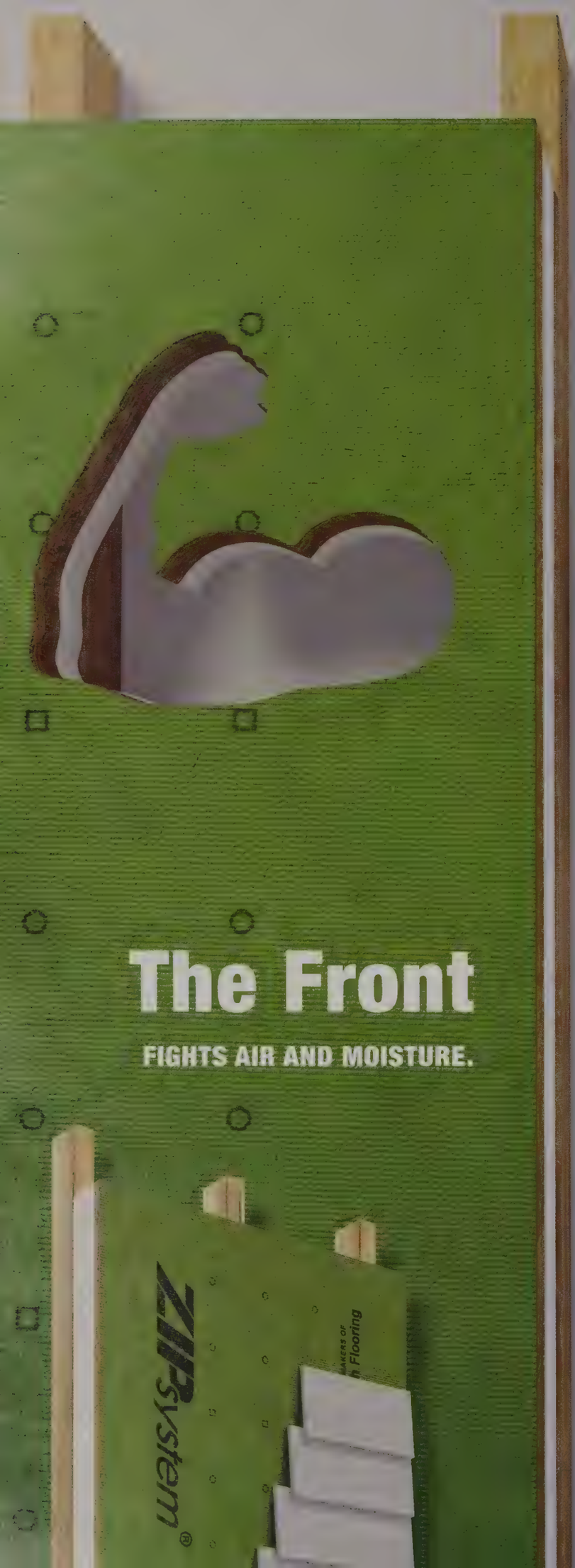
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ABOVE
Cameras, a 2013 installation of 150 fake security cameras on a building façade by urban artist SpY in Madrid.

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PROSPECT AND REFUGE

Almost since the founding of the nation, a conflict between the ideals of freedom and safety has run through the American character. The founders wanted a land of liberty, but they had to secure it first. You see this tension today, in policy clashes from gun control to environmental regulations to mandatory seat-belt laws. Efforts to curb hate speech run afoul of First Amendment freedoms. Gated communities restrict the free movement of everyone outside. Even the compassionate impulse to bring the homeless in off the streets in winter conflicts with an individual's right to refuse shelter.

Architects, too, are grappling with these strains. How do you build a school whose perimeter cannot be breached by a madman with a gun, while still allowing students the intellectual and physical freedom to grow? How can an American embassy in a troubled nation be secure from terrorist bombers while projecting values of transparency and welcome? What of residents in chronically flood-prone areas who are relocated to higher ground "for their own safety"—where are their rights to live in the only communities some have ever known?

This issue of *ArchitectureBoston* examines how designers balance the competing imperatives of liberty and security.

Threats are everywhere. The four natural elements—fire, wind, water, and earth—contain a fury that, when unleashed on poorly planned or constructed communities, destroy livelihoods as well as lives.

In these pages we visit Puerto Rico, Haiti, India, and Japan—places that have endured more than their share of nature's devastation. We uncover hopeful stories of social resilience helping communities rise from the ashes. But *physical* resilience is still key to planning for the known effects of climate change. At a minimum, let's not make things worse. Deforestation, fracking, loose or nonexistent construction codes, building luxury homes on sandy cliffs—these all exacerbate the impact of "natural" disasters. Despite what the insurance companies want us to believe, they are not simply acts of God.

Perhaps more difficult to plan for is a fifth element: mankind. The unspeakable violence that has rained on our communities this young millennium has tipped the scales of liberty. After the attacks of September 11, the question of how much freedom we are willing to give up for security became marbled throughout our lives, from the trivial (removing our shoes at the airport) to the profound (government surveillance; the Muslim travel ban). How we respond to these ongoing threats to freedom—with a wall or a bridge—will say everything about the resilience of the American project.



Photo: Ben Gebo

This is my last issue as editor of *ArchitectureBoston*. When I began this adventure seven years ago, I had no idea I'd find the work of Boston's design community so engrossing—and such an inspiration. The Boston Society of Architects/AIA gave me the rare gift of editorial autonomy even as it subsidized the magazine's costly production—sort of like combining freedom and safety! I was allowed to dive into 27 fascinating themes without ever feeling compelled to serve any favored interest. Some 40 volunteers cycled through the magazine's editorial board, cheerfully saving this nonarchitect from professional embarrassment. A more willing, accepting community would be hard to find. Can I say thank you?

In 2019, *ArchitectureBoston* will transform into an online design journal, with one print edition a year. The magazine's wonderful deputy editor, Fiona Luis, will continue on as editorial director. The change should make way for more timely and responsive content than we could offer in a quarterly print publication, plus opportunities to use video and other features of electronic media.

We like to say that *ArchitectureBoston* is where design and society meet: a mixture of public policy, advocacy, and aesthetics. Editors come and go. But the smarts, independence, and relevance of *ArchitectureBoston* stand strong. ■

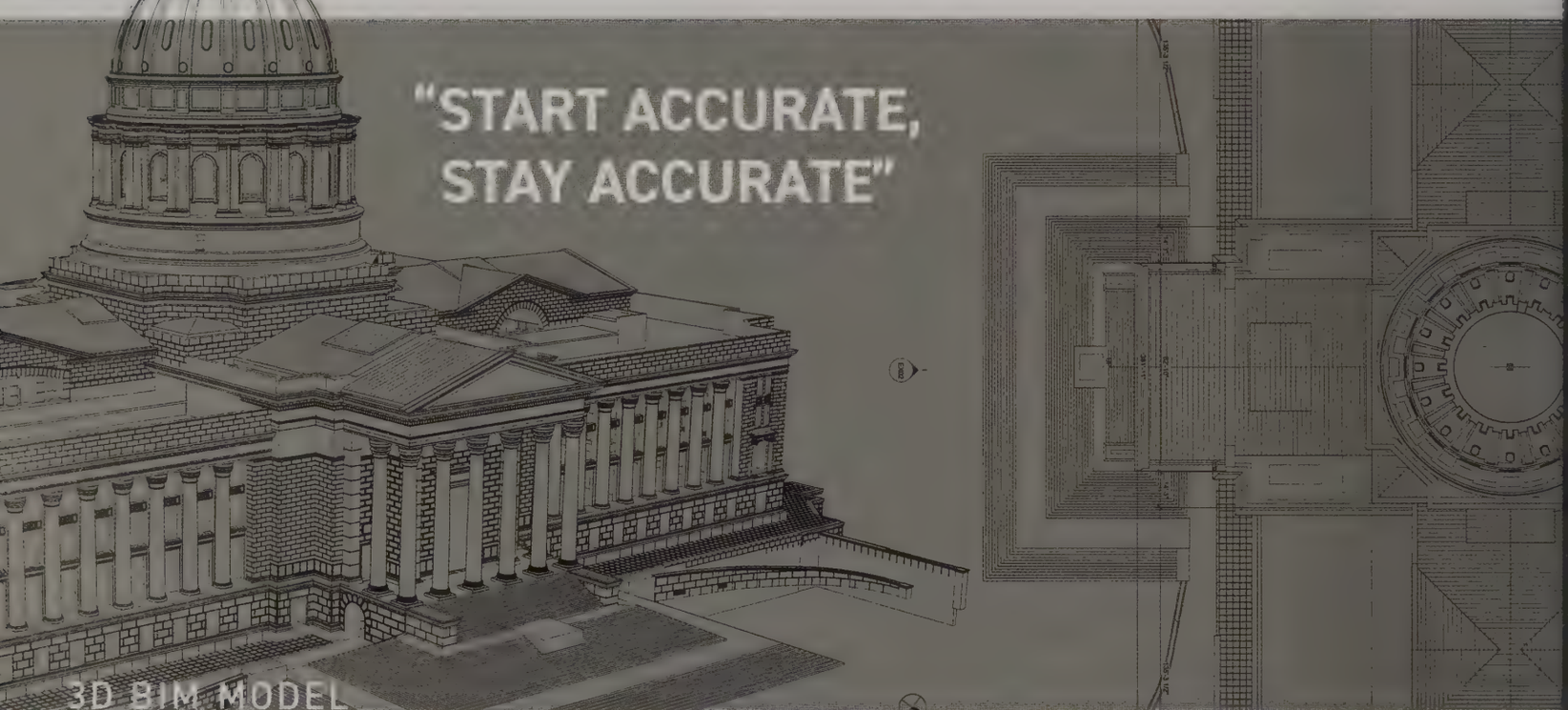
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ON "ETHICS" (FALL 2018)

Kudos on your recognition and celebration of the range of ethical behaviors embodied in the profession of architecture. Clearly each of us steps up to our professional responsibility to the public in our own way, setting goals for diversity in our practices and in our schools, for green buildings, for work within our local communities.

Last spring I identified a missing piece in the American Institute of Architects' Code of Ethics and campaigned for inclusion of a statement against workplace harassment or discrimination and the creation of a fair and equitable working environment. I was delighted that the board voted in September to amend the code. But, as Jay Wickersham so clearly notes in "Profit or the public good?," the code is merely a "set of aspirational goals." What is still needed is the personal affirmation of those goals by each of us.

The 600 fellows of the Institute who signed my petition demanding amendment of the Code of Ethics were attesting to their own adherence to ethical standards. They were eager to go on the record. The gap between how we "should" behave and how we do behave remains. A student emerging from architecture school still has no way of discerning which firms actively embrace the code. The good news, reading through the "Ethics" issue, is that we are headed in the right direction.

FRANCES HALSBAND FAIA
Founding partner,
Kliment Halsband Architects
New York City

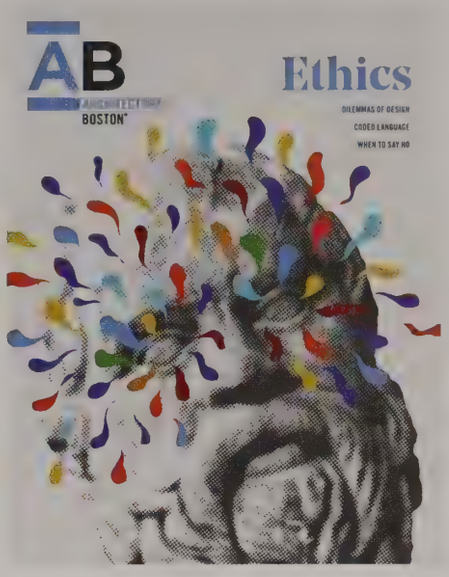
The essays in "Ethics" reflect on the complexities and nuances of ethical behavior in our profession, personal lives, and the public realm. Themes appear in each article that reinforce the architect's professional obligations articulated in the Canons of the AIA Code of Ethics to standards of excellence, knowledge and skill, human rights and dignity, natural and cultural heritage, allied arts and industries, as well as specific obligations to the public, the client, the profession, colleagues, and the environment.

In particular, "Coded language" presented design professionals' commentaries on Canon I of the code and their experiences in applying aspirational ethical standards to professional life. In fact, it is in professional life that personal commitment to ethical behavior lives or dies as we openly discuss and consider the implications of our choices with colleagues and clients. Open dialogue will advance the ethical obligations of our profession from aspiration to action.

As a member of the National Ethics Council, I am enthusiastic that the aspirational framework of the AIA's ethics obligations has been reinforced with more explicit language in the recently adopted 2018 AIA Code of Ethics. For clarity, in Canons I, II, and V, existing rules and ethical standards were modified to specifically address harassment and equity in the profession. In Canons II and VI, new rules and ethical standards were added to address sustainability and environmental equity and justice.

With these explicit amplifications to the ethical obligations, architects will be encouraged to move boldly to sustain an innovative and equitable practice.

ELISE WOODWARD AIA
Concord, Massachusetts



The timing of the "Ethics" issue was absolutely prescient. To borrow an overused but apt analogy, we seem to be in the midst of a perfect storm of social, cultural, and political unrest that is beginning to rival the upheavals of the 1960s. Out of this storm, questions for our profession are emerging: Where does architecture fit into this maelstrom? What is its role? Should architects work to effect change, or should we simply respond to changes around us? What's the right thing to do, and how do we go about doing it?

Reading the issue recalled for me a favorite nugget of appropriated wisdom: Architecture is as much an ethical discipline as it is a design discipline. The issue is a timely and provocative clarion call to architects to recognize the ethical dimensions inherent in their work and their practices, dimensions that are evolving with startling rapidity. We read how architects are increasingly being called upon—indeed, challenged—to expand the range of their services and to understand the ethical impacts of their work. Striking evidence for this: Between 1979 and 2017, the AIA Code of Ethics and Professional Conduct underwent only four revisions. In September 2018, one year after the 2017 Code appeared, the AIA announced a newly revised 2018 Code.

Many of the revisions contained in the 2018 Code can be directly traced to a groundswell of focused concern from AIA members about architecture's role in the detention of immigrants; in the design of facilities for execution and solitary confinement; in issues of equity, diversity, inclusion, and harassment; and in the environment and climate change.

To quote from Lori Brown's opinion piece in a recent *Architecture* magazine, "Our built environment *is* where policy and reality collide. Architects cannot remain silent or apathetic."

THOMAS PARKS AIA
Chair, BSA Ethics Committee
Boston

As a member of the Architecture Lobby and Architects/Designers/Planners for Social Responsibility (ADPSR), I was delighted with the issue, and the call for architects to contemplate the meaning of ethics for our contemporary profession. Jay Wickersham's essay points out the complicated nature of the "ethical" question in our profession, but more specificity would have given your issue more teeth. If we are truly concerned with our lack of an ethical compass, let's not hide behind platitudes.

We in ADPSR are pressuring the AIA to take up a position insisting architects not design places that abuse human rights. To many of us, this is a no-brainer. But those of us in the Architecture Lobby want to stress a less obvious issue: the link between our unethical modes of producing/practicing architecture and our indifference to the ethics of what we produce.

Hansy Better Barraza's annotation to Rule 1.401 in "Coded language" extends Frances Halsband's #MeToo argument beyond gender to race, class, and age, and stresses the need for workplace overhaul. But we should also question unethical labor practices that preclude overtime pay, sanction unpaid internships, deny workers control over their schedules, and assume workers should suck up the costs of bad fees. One cannot blame the AIA for these abuses, but we can be clearer about our workplace euphemisms.

"Emerging professionals"—and the AIA's (meager) support of them—is a term that obscures the fact that some of us are employees and some of us are employers, robbing both of the opportunity to address their mutual obligations. We seem so fearful of recognizing what other professionals long ago acknowledged: that the biggest favor a boss can give a worker is the right to *act* as a worker, acknowledging its legal and ethical importance. The link between this camouflage and its lack of respect for the individuals in the office and our lack of concern for others who are subject to our work is not a mystery. As long as we ignore workplace "ethics," it is easy to slip into an ideology of "If I don't, someone else will"—they both reek of getting the job at all cost with no thought of its upstream or downstream damage.

PEGGY DEAMER
Yale University
New Haven, Connecticut

Jason Forney's discussion of ethics from the Living Building Challenge (LBC) perspective ("Breathing lessons") was particularly interesting. I have also been involved with the LBC—the world's most stringent building standard and the source of the JUST program, noted in Gregory Minott's "Do the right thing"—which addresses climate change as solely the result of greenhouse gases. Although greenhouse emissions exacerbate the problem, they do not cause it. Our climatic problems are the result of a far wider disruption of the living systems of the planet. As architects/planners, we are responsible for much of that disruption; addressing that will expand on the ethical issues Forney identifies regarding the LBC.

Human actions have been warming the climate and creating deserts since we first built settlements. The built environment's share includes water drainage that disrupts water cycles and increases the proportion of solar energy that converts into sensible heat, which is the heat that greenhouse gases reflect. It also includes the use of hard materials that create excess sensible heat, deforestation from material harvest, and destroying soil biodiversity in site and landscaping design. Humans' oldest habitation sites, picked as fertile gardens, are now mostly deserts. Our current codes and practices continue the paradigm and create the same results.

To restore the climate, architects will need to expand their understanding of ecological systems, biology, biodiversity, thermodynamics, and hydrology, just as they have had to learn about energy and building science, and then demonstrate a masterful creativity with this newfound knowledge. In this far more complex and nuanced context, climate

restoration will require an even wider and deeper ethical foundation, where ethics may be the best and perhaps only compass.

CHRISTOPHER A. HAINES AIA
Principal, Permadigms
Lexington, Massachusetts

In his fine column about the transformative power of the Living Building Challenge, Jason Forney closes by saying, "Obviously, not every building can be a Living Building." On the contrary, I believe that is exactly our goal as a society. Have we grown so accustomed to waste, hazardous chemicals, destructive forestry, and climate pollution that we cannot envision a world without them?

According to the United Nations, "near-zero energy, zero-emissions buildings need to become the construction standard globally within the next decade" if we have any hope of meeting the goals of the Paris Climate Agreement. I am savvy enough to understand that supply chain realities and budget constraints will still hold sway. But that does not mean we should settle or become complacent.

The AIA Code of Ethics asserts that "architects should promote and serve the public interest," which fighting climate change most certainly is. At a time when dramatic change is desperately needed, society should expect the building sector to move with urgency toward truly restorative Living Buildings.

BRAD KAHN
Founder, Groundwork Strategies
Seattle

In the union world where I now work (I am on leave from my teaching position in order to serve as vice president of the Massachusetts Teachers Association), we like to say that the best organizer is a bad boss.

While I have to agree with Jay Wickersham that architects have been transformed from "sheltered expert into a marketplace competitor," I see hope in the resistance to President Trump, including within the architecture profession. The powerful pushback against the AIA's bear hug for the new administration and the robust challenge to the idea of the border wall, as examples, has helped lead a broader range of architects to move beyond what Gregory O. Minott nicely calls "our service relationship with clients."

But this must only be the start. I am reminded of one of the sayings of the organization City Life/Vida Urbana: "You should not be able to profit off of my shelter." Until we are able, as built environment professionals, to challenge the dominance—I'd like to use the word "hegemony"—of the marketplace, we will have avoided confronting the fundamental source of inequality in our society, the elimination of which should be a central ethical responsibility we accept.

To develop and become advocates of alternatives to the all-seeing eye of the market is not some utopian ideal for which we need someone to travel to distant lands and bring back to us. We only have to look to moments in our history, and our own city, for inspiration.

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IN THIS ISSUE



Courtesy of Chrysanthe B. Broikos

Chrysanthe B. Broikos ("Natural defenses," page 28") is an architectural historian and curator for the National Building Museum in Washington, DC. She has organized more than 30 exhibitions for the museum on topics as varied as air conditioning, office design, home improvement, and disaster mitigation. She recently joined the University of Virginia School of Architecture Dean's Advisory Board.



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Julia McFadden AIA ("See me, teach me, heal me," page 32) is an associate principal at Svigals + Partners based in New Haven, Connecticut, which she joined in 2008. She is project manager for the new Sandy Hook Elementary School in Newtown, Connecticut, where she facilitated more than 50 stakeholder workshops to design a replacement school that reflects the community's identity and aspirations after the 2012 mass shooting.



Courtesy of Design & Company

Robert J. Adams ASLA ("No reservations," page 36) is a principal at Halvorson Design Partnership, a Boston-based firm providing landscape architecture, site planning, green infrastructure, and urban design services throughout New England. His professional experience includes urban parks, plazas and streetscapes, campus design, large greenway systems, and resiliency planning.

Signe Nielsen FASLA and Molly Bourne ASLA ("A case study in complexity," page 40)



Courtesy of Mathews Nielsen Landscape Architects

Signe Nielsen FASLA (left) is a principal at Mathews Nielsen Landscape Architects in New York City and has practiced since 1978. She is a professor at Pratt Institute and currently serves as president of the Public Design Commission of the City of New York.

Molly Bourne ASLA, also a principal at Mathews Nielsen, has more than 26 years of design experience leading multidisciplinary teams on high-profile initiatives. She is a guest critic at the University of Pennsylvania.



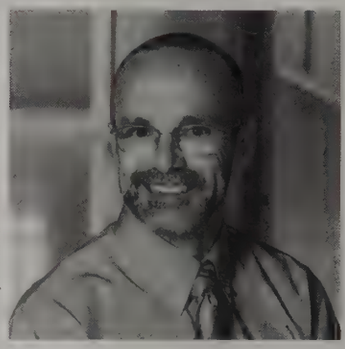
Courtesy of Stefan Al

Stefan Al ("A resilience ..cklist," page 44) is an architect and urban designer at KPF in New York City. Over the years, he served as a TED resident, adviser to the United Nations High Level Political Forum on Sustainable Development, and professor of urban design at the University of Pennsylvania. His latest book is *Adapting Cities to Sea Level Rise.*



Courtesy of Pete McBride

Pete McBride ("Force of nature," page 46) is a photographer, filmmaker, and writer who has documented remote expeditions from Everest to Antarctica for *National Geographic* and other magazines. His books include *The Colorado River: Flowing Through Conflict* and, most recently, *The Grand Canyon: Between River and Rim.* McBride hiked the entire length of the national park—750 miles—without a trail.



Courtesy of Paul E. Fallon

Paul E. Fallon ("Amid the rubble, a sweet solidarity," page 68) is an architect and the author of *Architecture by Moonlight,* about his three years supervising the construction of an orphanage and school after the 2010 earthquake in Haiti. His most recent book, based on a 48-state bicycle odyssey, is *How Will We Live Tomorrow?*



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No Spectators: The Art of Burning Man

Renwick Gallery, Washington, DC
Through January 21

When Black Rock City rises from the Nevada desert each August as the ephemeral home of the Burning Man festival, the otherwise empty site becomes home to more than 60,000 temporary residents who bring dramatic sculptures, immersive installations, and supplies for the barter economy along with their goggles and dust masks. My uncle went in 1996 and was raving about it when my family visited him that summer in San Francisco. He showed us how carefully people discarded cigarette butts into Altoids tins and vividly described the way the remote gridded community lit up at night. Yet for most Americans who are even aware of it, the art-filled festival is too extreme, too expensive, or too far away to be experienced.

The Smithsonian's Renwick Gallery has given the public access to this distant city with *No Spectators: The Art of Burning Man*, an exhibition that explores the oversized sculptures layered in minute details or the kinetic pieces that respond to human proximity, all of it begging to be Instagrammed. A room of photos, documents, and paraphernalia traces the history of the festival from the original burn in 1986 on Baker Beach in San Francisco through to the present day. While the largest pieces reward careful inspection, the archival material feels overwhelmingly intellectual.

As in Black Rock City, the pièce de résistance is the Temple. The smell of balsa wood, familiar from model building, overwhelms the senses in this cavernous and intricate space, and instantly transports me into memory. The forced contemplation is intentional. David Best, the artist behind the installation, says, "There's a lot of places for people to celebrate, but there's not a hell of a lot of places for people to reflect on loss." Small rectangles of balsa wood are available for reflection. I write a message for my uncle, who died in 2006, and tuck it into the detailed scrollwork on the walls that are full of shelves and curves specially built for holding our collective sadness and shared sense of wonder. At the end of the exhibition, there's an option to visit the desert using virtual-reality goggles, but I demur—the physicality of the installations in the Renwick and the emotions they elicit are all I need.

ALICE BROWN is Boston Harbor Now's director of transportation.

ABOVE
Temple, by David Best and the Temple Crew, 2018. Photo by Ron Blunt, courtesy of the Renwick Gallery of the Smithsonian American Art Museum.

JUST ONE LOOK

St. George's Chapel

Middletown, Rhode Island

The ideal prospect of St. George's School Chapel is from Little Compton, looking west across the Sakonnet River at sunset. This is the Rhode Island shore, yet the estuarine landscape punctuated by the chapel's spiky tower on the distant skyline is reminiscent of Devon or Cornwall. The silhouette could be mistaken for a 15th-century church tower in the Somerset countryside, evoking poems of A.E. Housman or Rupert Brooke ("If I should die, think only this of me:/That there's some corner of a foreign field/That is for ever England").

St. George's is the epitome of a New England prep school. That one expects to see the English Olympians from *Chariots of Fire* running along the beach is exactly the atmosphere that architect Ralph Adams Cram wished the chapel to convey. Built in 1928, but looking not a day younger than 1448, St. George's is a scholarly but lively exercise in Perpendicular Gothic—a romantic transatlantic echo of the college chapels of Oxford and Cambridge.

The chapel near Newport has been cited as a practice run for Cram's chapel at Princeton, yet St. George's is a near-perfect gem. As well known in his day as his contemporary Frank Lloyd Wright, Cram is perhaps the greatest architect America ever forgot. He designed everything in a variety of styles from war memorials to skyscrapers, was the first chairman of the Boston city planning commission, and was on the cover of *Time* magazine in 1926. Yet Cram is best known for his churches and his Gothic ensembles at West Point and Princeton. He designed both a church and a house in Newport for the family of St. George's donor John Nicholas Brown.

Cram was the master of the simple yet picturesque outline. Close up, however, the chapel surface is enlivened with carvings of the architect, the donor, and various athletes; one exterior wall features nautical motifs (a Viking ship and the *Santa Maria*, plus the battleship on which Brown served). But it is the interior that makes St. George's one of New England's preeminent Gothic Revival landmarks.

Walter Burnham, one of the country's most renowned stained-glass makers, created all the windows, and the ample window-to-wall ratio allows for a lot of glorious, Chartres-like light. The proportions are tall and the plan is unusual. There is neither nave nor transept—the chapel is composed entirely of choir, in the tradition of Oxbridge chapels. Thin colonnettes reach up toward the quadripartite vaults; the entire composition is extremely spare, almost Spartan.

But in keeping with the spirit of, say, Trinity College, Cambridge, or Merton College, Oxford, the walls are carved with memorials, some in Latin. Many carry sobriquets worthy of Kipling: "A Good Man" or "A Lifetime Friendship With Each & Every Boy." One teacher who gave three decades to St. George's is memorialized as "Sailor. Swimmer. Photographer. Storyteller. Incurable Optimist."

WILLIAM MORGAN, a Rhode Island–based architectural historian, is the author of *American Country Churches.*

BELOW
Photo: Alexander Nesbitt Photography



5 QUESTIONS

Nick Winton AIA

Nick Winton AIA is cofounder of Anmahian Winton Architects, designers of the ICA Watershed across the harbor from the Institute of Contemporary Art in Boston. Once an abandoned copper-pipe factory, the 15,000-square-foot contemporary art space, open from July to early October, sits between two existing industrial buildings in the East Boston Shipyard.

I've heard the word "unprecious" used to describe the ICA Watershed and its upward-folding hangar doors at each end of the space. Is that how you'd characterize it?
Definitely. We wanted the architecture to really nest with its immediate context, which is industrial and unpretentious, to have that same quality of strength. The space has an amazing scale to it: 50 feet wide, 25 feet tall, 300 feet long. We saw the role of design as being both reflective of that context but also new at the same time, and that's a balancing act. As an extension of ICA Boston, we wanted the building and space to feel welcoming and natural and ungallery-like.

Those doors operate on a daily basis and are open whenever the weather is decent to connect the interior of the building to the rest of the shipyard. You feel that the museum space inside is integral to the shipyard context. There's that one moment when you're standing at one end and see right through it all the way back to Boston, and the view visually connects you back to the ICA. The doors open up to 20 feet and are used for installing and unloading crates, so the line between art and context can be pretty vague.





Does the polycarbonate façade system echo an approach you took with your firm's much-lauded Community Rowing boathouse?
We like working with material that can be more than one thing, and the polycarbonate is a great example because it has the properties of an insulating wall; it's thick but also really light, and it's incredibly luminous. We've used it in other projects; at Community Rowing it's used in a discreet way, as a background material. We've worked with a particular fabricator in Pittsburgh who has helped us develop the right details and operational aspects. One of the things that attracted us to it for the Watershed is that it has a cellular structure and picks up the grain of the other material in the shipyard, like corrugated metal. It's the modern version of the corrugated material that was on the building originally. We loved it for its luminous quality, that milk-white material that grabs daylight and explodes it into the interior.

What did you decide to leave in place on the site and why?
We walked that line between homage and adaptive reuse. The structure that made up the infill was totally derelict and useless in the traditional sense of being load-bearing. We removed some of the center column and jib cranes that were attached. It was a great example of 19th-century industrial shed territory.

ABOVE
The skylight slot creates a 300-foot-long beam of light that moves across the gallery floor.

LEFT
Housed in a former copper pipe and sheet metal factory, the Watershed features hangar doors that blur the line between art and context.

Photos: Courtesy Anmahian Winton Architects

Of the two side walls, one in particular—the exterior of the building next door—became our interior wall, an impressive collage of concrete block, structural outriggers, and motorized cranes. One thing we noticed when we visited the site was when the light was cast across that wall, it was incredible, so that drove the key ingredient of the design: the skylight slot that runs along that wall, which [inaugural artist] Diana Thater used as part of her show. We couldn't resist it. It could have brought too much light into the Watershed, but the curators felt it was going to be our friend in this case.

Were there any neighborhood stumbling blocks?

The ICA made an early and concerted outreach to the constituents to say, "We want a broader audience for what we do and to embrace your community." There's a lot of pressure on the cultural core in East Boston, and fortunately for us, we felt welcome. The concern was: Will there be room for some articulation of East Boston? From a curatorial standpoint, the ICA wants the work in the Watershed to always be in the broader context—Boston Harbor, sustainability, resilience. The response was: We're not a museum *of* East Boston but want very much to respond to and respect East Boston. The front gallery is dedicated to our location and its history; there's also comfort in the fact that it's free—that's a huge, important piece.

What is your favorite element or detail about the Watershed that no one has picked up on—yet?

My favorite by far, under normal operating circumstances, is when the skylight is unadorned, the light that is cast across the building wall that's the Watershed's interior wall but that's really the wall next door. The light is amazing: It creates an incredible 300-foot-long beam of light that moves across the floor because of the solar orientation. I've been fortunate to witness that, working in the space. It's one that no one really has experienced. —Fiona Luis

SEEN

Beacon Hill

Boston

"You don't look for pictures. Your pictures are looking for you." This wisdom, shared by photographer Harold Feinstein when I first moved to Boston 25 years ago, continues to resonate today. The pictures that found me have always been more about color, texture, line, and shape than any attempt at literal representations. Pulling apart, zooming in, and skewing frames reveal Cubist collages of skyscrapers, the bejeweled patina of corroded and decaying transit stairways, the accidental play of light in Beacon Hill's secret corners. Boston is a city built from a palette of warm browns, now punctuated by béton brut and reflective surfaces that deepen and expand the effect. The assemblages are simple, balanced, and soothing.

By zeroing in on the details—that is, after all, where some say we find God or perhaps the devil—banal and esoteric elements take on the ability to evoke Modernist masters. Capturing textured exteriors as they compete against a blue sky background offers an American folk art sampler. Discoveries are everywhere. There is no shortage, there are no repeats. Meeting the city in this way becomes an intimate game, even trystlike, as if showing its secrets to anyone willing to simply stop, and look.

SUSAN GREEN is the committee engagement and technology manager at the Boston Society of Architects/AIA.







CONSIDERED

Carbon-based species

When the old path of Centre Street on the west side of Harvard's Arnold Arboretum was straightened, a set of "invasive" black locust trees soon took root in the former road bed. (Black locust, or *Robinia pseudoacacia*, is on Massachusetts' invasive species Prohibited Plant List.) It is like that at the Arboretum: rogue species rising among accessioned species. Recently, several of these locust specimens were selected for their exceptional durability as building material and removed for the purpose of new footbridges, each simple timber structure providing improved access to the Arboretum grounds. This is not primarily a story of public accessibility or about cunning carbon cycles, however. In today's political and ecological climate, it is above all a reminder of how species interact, how none is invasive but rather entangled in rich, evolving sets of mutualities and feedbacks to be maximized through design.

KIEL MOE is an architect and the Gerald Sheff Chair of Architecture at McGill University. He worked with Harvard GSD students Iain Gordon and Peter Osborne on the design and construction of the new Arnold Arboretum footbridges.



TOP LEFT
The most durable of the invasive black locust tree specimens are selected for transformation.

TOP RIGHT
After the trees are milled and assembled into the simple bridge structures, the installation begins.

ABOVE
The finished footbridges in—and of—their environment, providing greater access to the Arboretum grounds.

XTCA: Cross Town Contemporary Art symposium

University of Massachusetts, Amherst
September 22, 2018

Setting a playful tone by assuming the role of yoga instructor, Jen Delos Reyes asked attendees to stand up and morph into interpretive poses inspired by works in the XTCA exhibition. The artist and keynote speaker's icebreaker served a higher function: to underscore that public and socially engaged art is intrinsically linked to viewer interaction, allowing us to connect with ideas and people outside the conventions of the gallery and the comfort of our own experiences.

Taken into the public realm, art adopts a new kind of egalitarianism and accessibility. Traditional hierarchies in aesthetic experiences are challenged and upended. The viewer, no longer corralled through a maze of curated encounters, becomes an unpredictable collaborator, a variable in the evolving context of street and commons.

The symposium got straight to tackling deeper ethical dilemmas. Reyes introduced the concept of the artist as gentrifier, which was echoed in the panel "Community Building: Art as a Generative Force." Pasqualina Azzarello explained how she avoids the folly of the artist "parachuting in" when embarking on community-driven work: "What are the existing resources and structures? Who is not in the room, and how do we get them there?" Another panelist, Joseph Krupczynski, said to build trust as a designer, his most important role "is to listen." Pamela Matsuda-Dunn allegorically framed her own artwork, which required repairs during the course of the exhibition: "The failures in the piece, the breaking and rebuilding, become a metaphor for the process of building a community."

The symposium didn't miss much in covering the gamut of issues surrounding art in the public sphere and its place in building community. The biggest takeaway was a challenge for the future: Can we reimagine public art not as something that necessarily changes the view so much as an experience that changes the viewer?

SAMUEL ROWLETT, an artist and writer based in western Massachusetts, is associate professor of art at Landmark College in Putney, Vermont.

BELOW
Bridging Our Community, by visual artist Pamela Matsuda-Dunn. Photo: Sarah Crosby. Reprinted with permission of the *Daily Hampshire Gazette*. All rights reserved.





ABX 2018

Build your Network

Design the Future



Christina Lanzl
Director, Urban Culture Institute
17-time show attendee



The Tower at PNC Plaza, PNC, Gensler. Photo by Connie Zhou Photography. 2016 Award Winner for Sustainability Design

Big thanks to our attendees, exhibitors, speakers, press, vendors, temporary staff and volunteers for participating in ABX 2018.

Next year's show will take place November 6-7, 2019. Hope to see you there!

Congratulations to all the winners of the 2018 AIA New England Design Awards

Honor Awards

- **10 Farnsworth**
 designed by CBT
- **Duke University, Rubenstein Arts Center**
 designed by William Rawn Associates, Architects
- **Karl Miller Center, Portland State University**
 designed by Behnisch Architekten in collaboration with SRG Partnership
- **Lumen at Beacon Park**
 designed by Touloukian Touloukian
- **Pool House**
 designed by Roger Ferris + Partners
- **Research + Design Center**
 designed by NADAAA
- **Rock Creek House**
 designed by NADAAA
- **Salesforce Transit Center**
 designed by Pelli Clarke Pelli Architects with Adamson Associates International
- **Tanderrum Pedestrian Bridge**
 designed by John Wardle Architects and NADAAA with Oculus
- **Tecnológico de Monterrey New Main Library**
 designed by Sasaki with GLR Arquitectos and RDLP Arquitectos
- **The Lucas**
 designed by Finegold Alexander Architects

Citations

- **Brattleboro Music Center**
 designed by Scott Simons Architects
- **Bridge House**
 designed by Höweler and Yoon Architecture
- **Daniels Building**
 designed by NADAAA
- **Field School**
 designed by Jonathan Levi Architects
- **Innovative Play and Ambition in a Small Project: Five Fields Play Structure**
 designed by Matter Design and FR|SCH Projects
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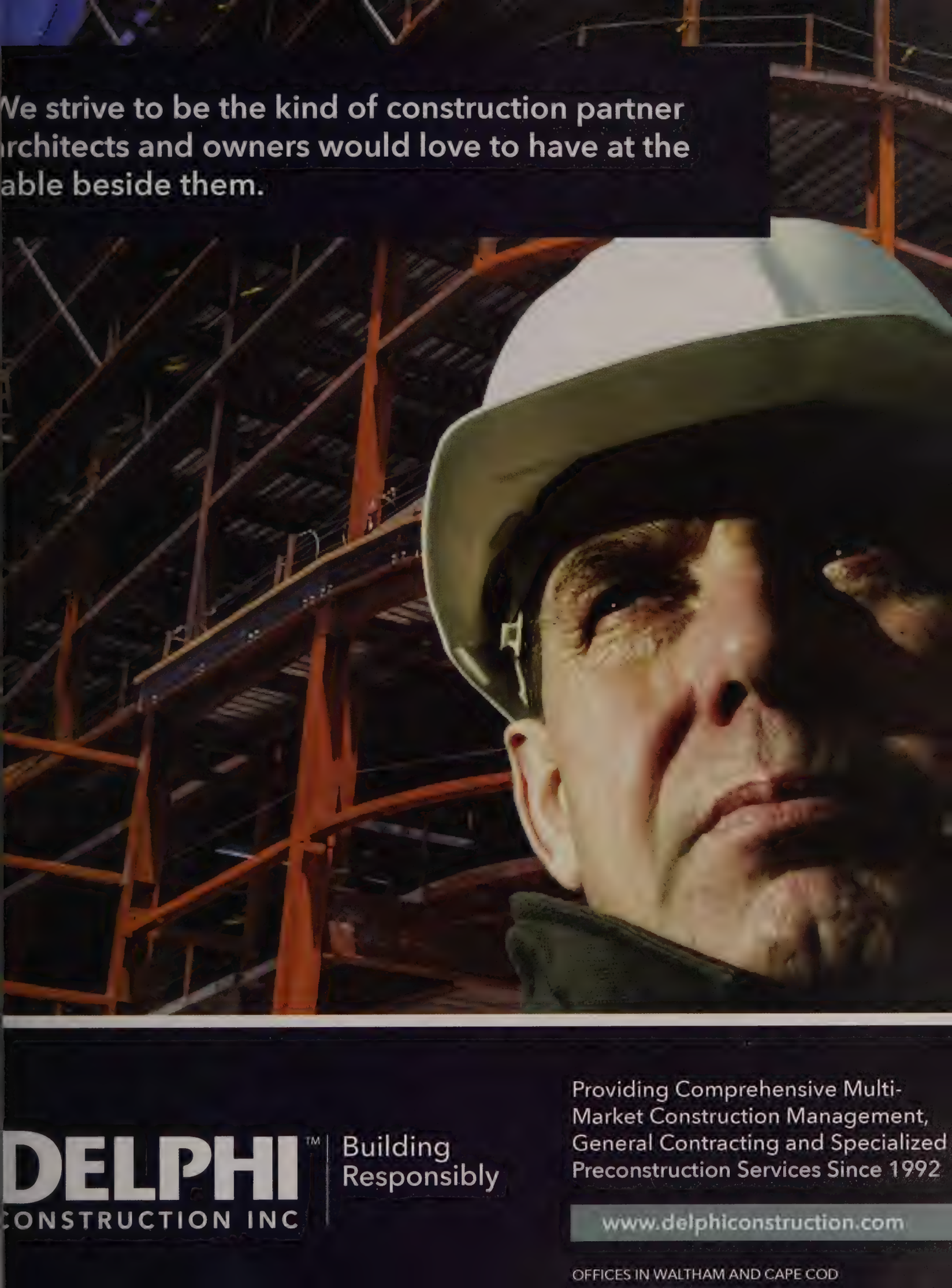


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SAFE

WINTER 2018

Earthquakes, terrorism, hurricanes, tsunamis, school shootings, storm surges—how can designers help communities adapt and rebuild?



A NEW WORLD ORDER

DISASTERS DO NOT RESPECT GEOGRAPHIC BOUNDARIES; THE CHALLENGE OF DESIGNING SECURE SPACES IS GLOBAL. IN THESE PAGES, *ARCHITECTUREBOSTON* SURVEYS FIVE APPROACHES TO MITIGATE OR RESPOND TO DISASTER, WHETHER NATURAL OR MAN-MADE.

INDIA

THE EARTH SHAKES, THE PEOPLE RISE

by Hubert Murray FAIA

On January 26, 2001, an earthquake measuring 6.9 on the Richter Scale struck Bhuj in western Gujarat state in India, killing 13,805, injuring 166,836, destroying 339,000 buildings, and rendering up to a million homeless. Devastation was recorded almost 200 miles from the epicenter, even to modern construction in Ahmedabad, the state capital. More than $200 million of international aid poured in, and the government of Gujarat pledged $1 billion in reconstruction grants supplemented by loans from development banks.

Ten years later, the BBC "found the place transformed from a pile of rubble in a neglected backwater into an economic powerhouse." Examples of this success include an airport at Bhuj, a seaport at Mundra, and factories in Anjar, much of the private investment attracted by tax relief and suspension of excise duties. On a more recent visit, however, I found a social investment in community organizing and skills training, leading to successes arguably more profound than those injections of external capital.

A visitor to the region may stay in the Shaam-e-Sarhad Village Resort in Hodka, an ecotourism hotel built, owned, and operated since 2005 by 13 of the surrounding villages affected by the earthquake. The hotel is designed as a series of individual round houses, or bhungas, clustered around common services, using traditional construction and decorative techniques. It is an astonishingly beautiful place with a level of food and service one would expect from any first-class hotel. Where does such excellence come from, especially in the aftermath of a disastrous earthquake, and in such a remote area?

The answer lies in a network of community organizations, some originating before the earthquake, others later. The organizational midwife of the project, helping the 13 villages establish their goals and guiding the setting up of management and operations, was the Kutch Mahila Vikas Sanghatan Collective. Comprising more than 12,000 women, it was founded in 1989 with the express intention of empowering members with skills development and overcoming divisions of religion and caste. The Hunnarshala Foundation, set up after the earthquake to help with reconstruction based on artisanal knowledge, complements this organizational capability. The foundation combines traditional techniques such as rammed earth construction and roof thatching with the benefit of engineering analysis to address seismic vulnerabilities and accommodate larger spans. Hunnarshala and the women's collective share the conviction that design and building can and should be managed by "the people themselves."

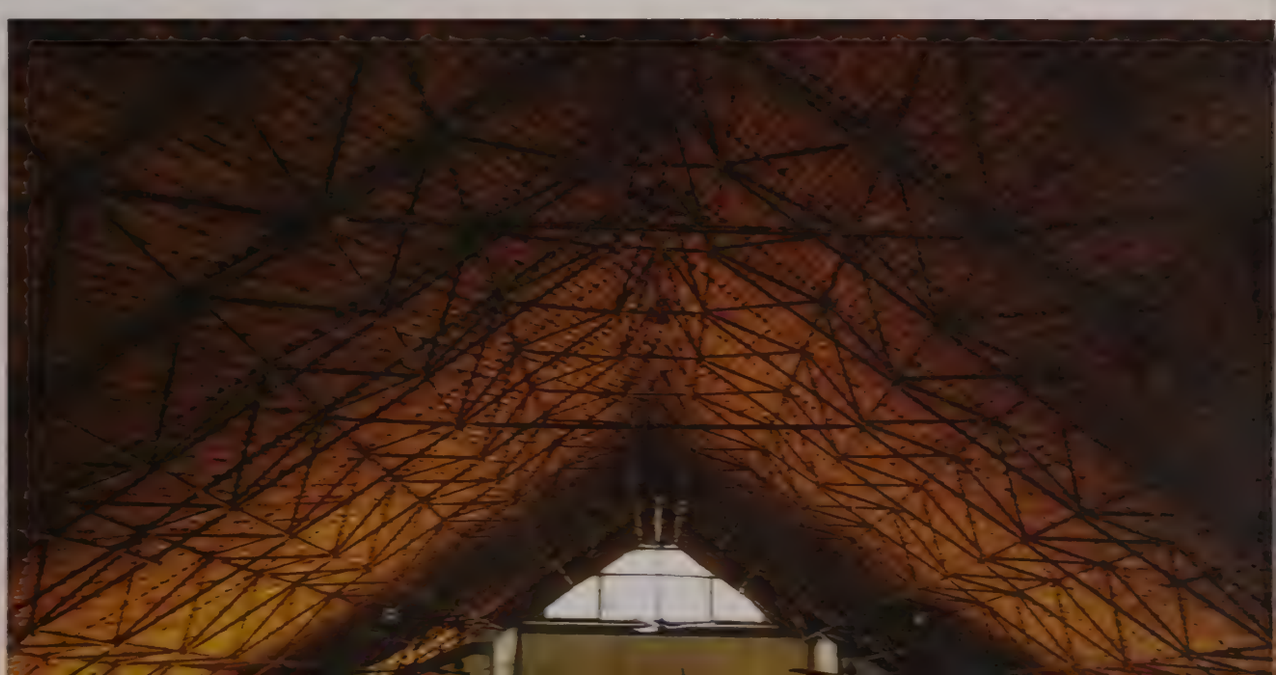
Hunnarshala has also provided trainers and enablers to local communities in other areas. After the earthquake and tsunami that hit Indonesia's Banda Aceh in 2004, village women from Kutch, part of the Hunnarshala team, provided training in thatching techniques; they have now formed their own nonprofit company, the Mathachhaj partnership. Hunnarshala's own technical training center in Bhuj, started in 2011, makes a point of including trainees of diverse backgrounds. Close by is the Khamir Crafts Resource Center, a training center for the propagation and development of traditional crafts, where the instructors are artisans from the surrounding communities and the trainees are eager to learn and set up in business.

What these projects and organizations exemplify is the enduring strength of indigenous skills that, with an approach enabling local organizing and decision making, can form the basis for social, economic, and physical reconstruction of communities after a disaster. ■

HUBERT MURRAY FAIA is an architect and planner in Cambridge, Massachusetts.

RIGHT
The Hunnarshala hostel building, built under the guidance of the Hunnarshala Foundation in Bhuj, India. Photo Courtesy Hunnarshala Foundation

LEFT
Automatic Earth #13 by Kiea McKenna, 2011. Photographic rubbing of a 100-year-old cedar tree, on gelatin silver photogram, 22 × 20 inches. Image Courtesy the artist and Von Lintel Gallery



PUERTO RICO

POWERING THE RECOVERY GRID

by Pedro Sifre



It's been more than a year since Hurricanes Irma and Maria ripped through Puerto Rico, cutting deep into the body and soul of the island. The daunting tale of damage and recovery can be told through various industries, from tourism to chicken processing to agriculture. Maria wiped out the 2017 coffee harvest—already staggered by blows from earlier storm cycles—and most of the trees. A new tree takes three years to produce fruit; growers would have to plant 6 million every year for the next three years just to regain their 2017 production levels. Few family-owned farms have the wherewithal to endure three years of rebuilding, let alone to survive another year like 2017.

Impacts on nature were equally profound. Estimates of bees killed by the storm run up to 90 percent, with the corresponding effects on fruit crops that depend on bees for pollination. Destruction of forests in the eastern end of the island exposed the forest floor to erosion, heat, and ultraviolet light. Consequently, a species of tree frog that sings at night and was adapted to this region is functionally extinct—a silent spring of sorts.

The 2017 hurricanes laid bare the risks posed by decades of informal construction. Tens of thousands of homes on steep slopes and in flood zones were destroyed. Thousands more were a total loss from wind uplift on corrugated steel and wood roofs and from smashed unreinforced masonry walls.

Less evident than the spectacular devastation of dwellings and systems was the grinding loss from seemingly minor damage on otherwise intact structures that overwhelmed residents and businesses for months. The local climate requires dehumidification for operating hotels, healthcare facilities, food service, and any dwelling that lacks ample ventilation. Leaks from wind-driven rain, loss of air conditioning from lack of power, and tropical heat for an extended period of time produced rampant mold growth. Similarly, leakage into electrical rooms, elevator machine rooms, and the like ruined systems in thousands of buildings.

Despite the bad news, the response to the disaster offers glimmers of hope. After Maria, citizen networks mobilized to complement the clipboard-and-form bureaucracy. Maria entered the island on its southeast coast, precisely the operating region of a nonprofit organization called Programa de Educación Comunal de Entrega y Servicio Inc., or PECES, founded in 1985 by a former Catholic nun. Its mission, to foster the economic and social development of disadvantaged communities, has now expanded to the fit-out of hardened shelters, starting from existing abandoned structures that survived the hurricane.

There is renewed interest in the cooperative movement, which has a long history on the island. After notable successes in recent years taking over private factories slated to close upon the expiration of tax incentives, business cooperatives mobilized their membership to repair damage to properties and surrounding communities. Design professionals from the Boston area have united to collaborate with local professionals, institutions, and citizen groups to apply design and resiliency ideas to recovery projects and planning efforts. The eventual deployment of local, decentralized electrical micro-grids is now all but certain. Micro-grids operate autonomously and can keep the lights on when the central power grid fails. Lessons learned from these installations will eventually benefit millions around the world.

One has to hope that the resourcefulness, focus, and energy of so many agents bolsters the island's resiliency. While we are focusing on storms, let's not overlook the fact that the Puerto Rico Trench and nearby fault lines have the potential to generate earthquakes in excess of a Richter magnitude of 8.0. The last big one, tsunami and all, occurred during hurricane season, on October 11, 1918. ■

PEDRO SIFRE, a senior principal at Simpson Gumpertz & Heger, is a structural engineer with 34 years of experience designing commercial, residential, and institutional buildings.

LEFT
Rebecca and Roberto Atienza, third-generation coffee farmers in Puerto Rico, return from surveying Hurricane Maria's damage to their farm. Photo: Nick Michael/NPR

UNITED STATES

THE HUNT FOR HIGHER GROUND

by Jason Hellendrung ASLA

Cities in coastal environments around the world, among the most vulnerable to sea-level rise from a changing climate, have experienced unprecedented growth since 1950. Several are thoughtfully considering how to adapt to a wet future. In Boston, we are looking at elevating roads, seawalls, or entire buildings; constructing new locks and flood gates; or building new ecological barriers, such as tidal marshes, to absorb higher water levels and storm surges.

Still, we must ask, "Is it enough?" Some geophysicists, evaluating ice melt of glaciers, suggest we may be looking at 10 feet of sea-level rise by the end of the century. At that rate, we're no longer tinkering with road elevations: We need to be asking whether some coastal environments are suitable for habitation.

Several regions are now starting to consider "managed retreat" from the coast. One of the most highly publicized initiatives is in Isle de Jean Charles in Louisiana, 80 miles southwest of New Orleans. This vulnerable community of about 100 residents sits outside the federally approved alignment for risk reduction along coastal Louisiana. Moreover, the area has seen nearly 98 percent of the marshes and wetlands around the peninsula wash away in recent decades, leaving a single road providing the only access.

In 2016, Isle de Jean Charles was awarded $48 million from the US Department of Housing and Urban Development to create a model for voluntary relocation of the entire community. The federal award has a special poignancy because much of the community represent multiple tribal nations that were pushed to this land during earlier westward expansion of the United States. Although still in the planning stages, the goal is to relocate the entire town approximately 40 miles north, creating a new, mixed-use community that will generate revenue and jobs to become self-sustaining.

Mathew Sanders, the project manager for the Louisiana Office of Community Development, describes the residents as "climate pioneers" and the effort as a test to "preserve a community's cultural identity while creating an economic model that can become a transferable model to other communities for coastal retreat." But the effort has required a significant investment in relationship building with the community following the distrust built up over centuries.

A second example is on Long Island in New York. Still rebuilding from Superstorm Sandy, the state of New York has initiated a study to explore a transfer of development rights program for Long Island. This would allow communities along the coast designated as "Extreme Risk Zones" to sell development rights into a "development rights bank," which could then be resold to developments in higher, drier locations in the center of Long Island, ideally around historic downtowns and rail stations.

The program is still evaluating potential impacts and hurdles. One is legality: Currently, development rights can't be transferred across municipalities. Other considerations include lost property tax revenue and the effect of those reductions on roads, utilities, schools, and emergency response and fire districts. Residents have mixed emotions about the proposal, but with more than 50,000 properties on Long Island in the Extreme Risk Zone, the program offers a market-driven strategy to help strengthen communities while limiting exposure to future sea-level rise and storms.

Isle de Jean Charles and Long Island present a vision for the future that coastal communities are going to need to address. Both programs offer a contrast to more traditional property acquisitions, individual buyouts, or buyback schemes initiated by federal agencies following disasters in recent decades. Both present an opportunity for growing communities and supporting economic development. They offer an alternative for communities that may not have the density, population, or property values to justify a major investment in infrastructure to protect the community. They represent a tool we'll need to sharpen as we face the reality that some areas are no longer suitable for habitation. ■

JASON HELLENDRUNG ASLA, vice president of planning and design for Tetra Tech, has led coastal adaptation and resilience projects and programs across the United States.

BELOW
All that remains of the road to the Isle de Jean Charles. Photo: Ben Depp



JAPAN

CONNECTING THE SOCIAL DOTS

by Daniel P. Aldrich

The community of Taro in Iwate Prefecture in Japan's northern region of Tohoku is no stranger to tsunamis. After facing two massive waves over the last 120 years, survivors demanded that the local government do something, so eventually it did: The city built massive seawalls that would keep the residents safe.

Residents told me that when the seawalls were completed (and the town nearly bankrupt) in 1958, a new spate of construction began immediately. But physical infrastructure created new norms and altered risk behaviors that set them up for calamity.

On March 11, 2011, a massive 9.0 earthquake struck off Tohoku's coast. Residences and commercial buildings, by and large, suffered little damage. But that earthquake set off a tsunami as high as 65 feet, which surged toward the coast about 40 minutes after the tremors stopped. The government issued tsunami warnings and evacuation orders, but not everyone left vulnerable, low-lying areas along the coast.

Many residents in Taro believed that the wall would save them. They didn't evacuate to higher ground. Others climbed to and stood on top of the seawall to see what risks they faced. Much of the wall crumbled and was swept away, and 144 people from the community—about 6 percent—died. Across the Tohoku region some 18,400 people died, almost all of them in the black waves.

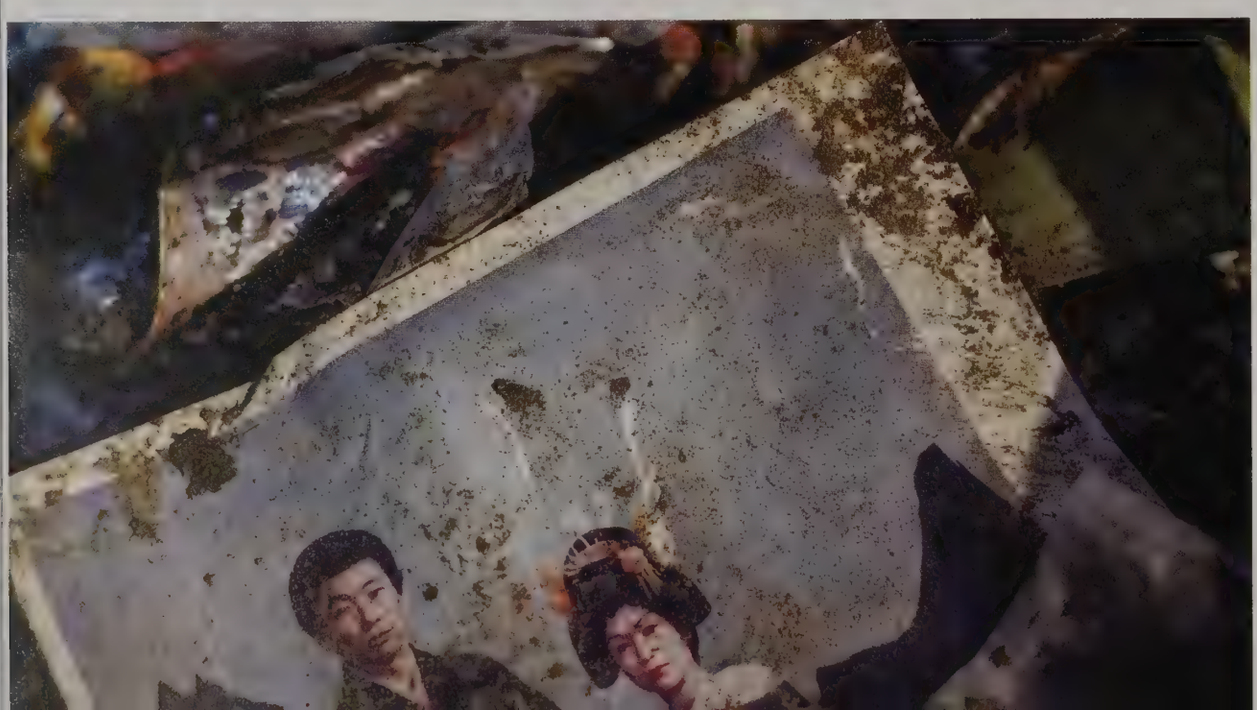
Since my own home was destroyed by flooding after Hurricane Katrina in New Orleans in 2005, I have learned that what keeps people safe during disaster and accelerates their recovery afterwards is actually social, not physical, infrastructure. In communities in Japan, strong social connections motivated young people to carry the elderly and infirm to safety ahead of the tsunami. In the 40 minutes between the earthquake and the arrival of the waves, healthy and younger residents could easily walk the mile or less uphill to higher ground. But those in bed or facing disabilities needed help to get to safety. In an academic study of more than 140 communities along the coast, my Japanese colleague and I found that those with more social infrastructure had lower levels of mortality than similar ones that had division and a lack of trust.

Social ties matter after a crisis. In the recovery process, individuals with more connections to neighbors better handled the immense stress of evacuation. Some who fled homes near the Fukushima nuclear power plants had to move six times over the course of a year.

My Japanese colleagues and I interviewed members of the city of Futaba, which had to evacuate in March 2011 as the plants melted down. Through conversations and surveys with more than 500 people, we learned that having neighbors whom they knew reduced their stress and post-trauma symptoms.

Finally, our study of more than 40 tsunami-affected cities and towns found those communities with more vertical ties to decision makers and politicians rebuilt infrastructure, homes, and schools more effectively. Towns and villages in Tohoku that had only a single powerful advocate in the central government—think of former Massachusetts senator Ted Kennedy or former Senate Majority Leader Harry Reid—did measurably worse than those with four or more such power brokers.

While decision makers may move quickly to construct large-scale physical infrastructure, as has been proposed here in Boston to handle rising seas, they should instead look to the power of social infrastructure. ■



DANIEL P. ALDRICH directs the Security and Resilience Studies program and teaches at Northeastern University.

LEFT
A box of photographs left in the wake of the tsunami in Minamisanriku, northeastern Japan. Photo: David Guttenfelder/Associated Press

GREECE

IN THE REALM OF THE UNKNOWN

by Ann Beha FAIA



Design that anticipates; design that responds; design that protects and resists yet welcomes—design that *feels* protected—is this designing for "safe"?

Making buildings resistant and performative is a core obligation, largely technical. But making occupants feel safe adds the emotional, the unforeseen, the experiential, and even the political to that mix. What could happen? What settings convey security while still assuring comfort and community? Much tougher. Technical design incorporates codes and criteria, but the perception of safety is evaluative, subjective, and often intangible. Design is looking to prove a negative: "Nothing went wrong."

As our firm designs for "safe," we draw on five years of work for US State Department facilities abroad, upgrading them to be more secure, effective, and also welcoming; after all, these are our diplomatic buildings. In Athens, the upgrade and expansion of the Gropius chancery and embassy compound, which we were awarded in 2014, emphasizes security, safety, and resilience. Careful oversight of all aspects of the design is embedded throughout the process. Outside experts advise and review so that all aspects of the structure and systems will perform at their highest potential for resistance. Many existing conditions require meaningful change.

Walter Gropius envisioned his design set on an open, sweeping lawn, with a large open courtyard in the center of the chancery. These conditions have practical and security shortcomings and must be reconsidered. As we look forward to more work for the State Department, on more embassies and buildings abroad, we can imagine similar issues will remain a top priority. But even the most sophisticated of teams can only future *plan*, not future *proof*, for the unknown.

Well beyond government buildings, security concerns and design obligations have widened. Civic and institutional owners require that facilities address internal and external threat and worry about the past and the inconceivable. This framework of concerns has unsteadied design assumptions. We take for granted that we will provide a building both stable and resistant, mindful of intrusion or impact. Less certain is that occupants, relying on building performance, employee training, and protective systems, can find in their daily settings the calm and support to deal with unforeseen events or fears, perceived or actual.

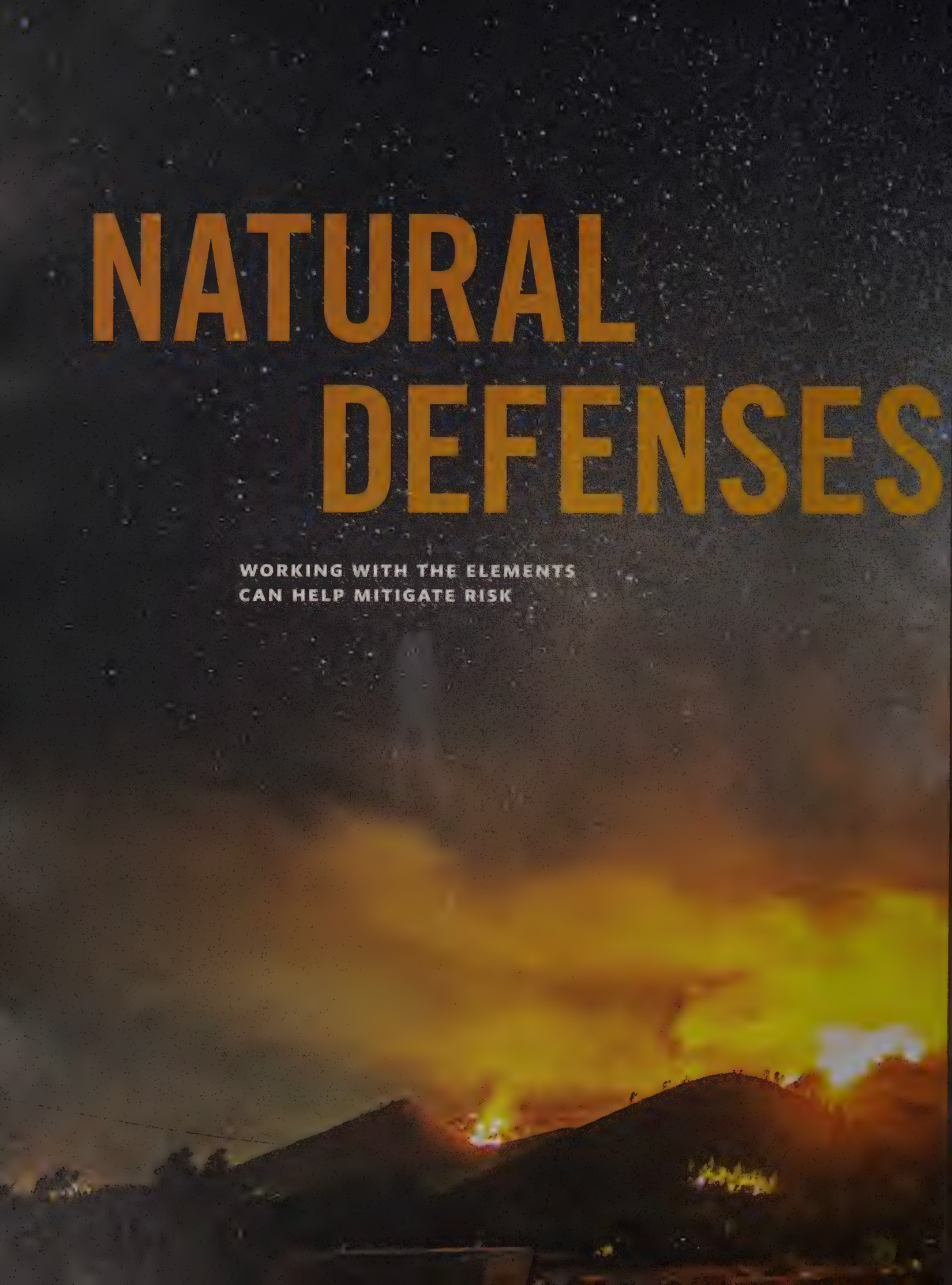
So, we make fences that try to be good neighbors but set us apart. For Athens, fencing is open to the street, and the embassy visible and majestic. Landscape is seen and used safely, with buffers. New windows shield, and space plans provide strategic sightlines. Corridors are wider, interior views more open, hardware more secure, systems redundant. There are more places to gather and collaborate and a sense, through this, of the workplace as community.

Throughout the design process, experts have considered the "what ifs," which could be answered with fewer entries, more interior observation points, smaller and less visible openings, protective glass, and an aesthetic that conveys resistance, even discouragement. Design a deterrent, while still a common ground: These goals become a tension-ridden mandate.

Design can't predict. The future of conflict and adversity is not known. Our current times have sensitized designers to ask probing questions and design to a new level of awareness and performance. We help buildings resist and stabilize. We help occupants prepare, exit, shelter in place, and monitor their surroundings. But the real "safe" belongs to policies and politics. Removing threat, returning buildings to common ground and community, is the ultimate goal. A healthier, more reconciled world is our best and only true defense. It goes way, way beyond architecture. ■

ANN BEHA FAIA, design principal of Ann Beha Architects, works on projects for the arts, education, and the public realm nationally and internationally. She is the recipient of the 2018 Award of Honor from the Boston Society of Architects/AIA.

ABOVE
The eastern corner of the US Embassy in Athens, photographed at dusk in 2016. Photo: Yiorgis Yerolymbos



NATURAL DEFENSES

WORKING WITH THE ELEMENTS CAN HELP MITIGATE RISK

by Chrysanthe B. Broikos

The term "natural disaster" is an oxymoron. There really are no disasters in nature. All disasters are man-made: the result of individual actions—or inaction—and a host of societal, economic, and political factors.

In 2014, I organized an exhibition for the National Building Museum that posed fundamental questions about where, and how, we build. *Designing for Disaster* opened in the aftermath of Superstorm Sandy and the 2012 Rio Earth Summit. At every level, from family preparedness to federal policy, I discovered that what many of us had considered safe in the past was no longer proving safe *enough*. Everywhere I turned, acceptable levels of risk were being recalculated, recalibrated, and redefined.

No matter the nuances or complexities of a particular risk equation, they all had at least one variable that could be manipulated to decrease either the severity or likelihood of the risk—identified vulnerabilities, such as the number of people or type of strategic assets in harm's way—or increase the capacity and effectiveness of the systems and

THIS SPREAD
The Way Fire burns on August 19, 2014, in the Sierra National Forest near Kernville, California. Photo: Stuart Palley

infrastructure designed to perform during the event. The upshot: Mitigation measures can decrease vulnerabilities or increase performance, or do both.

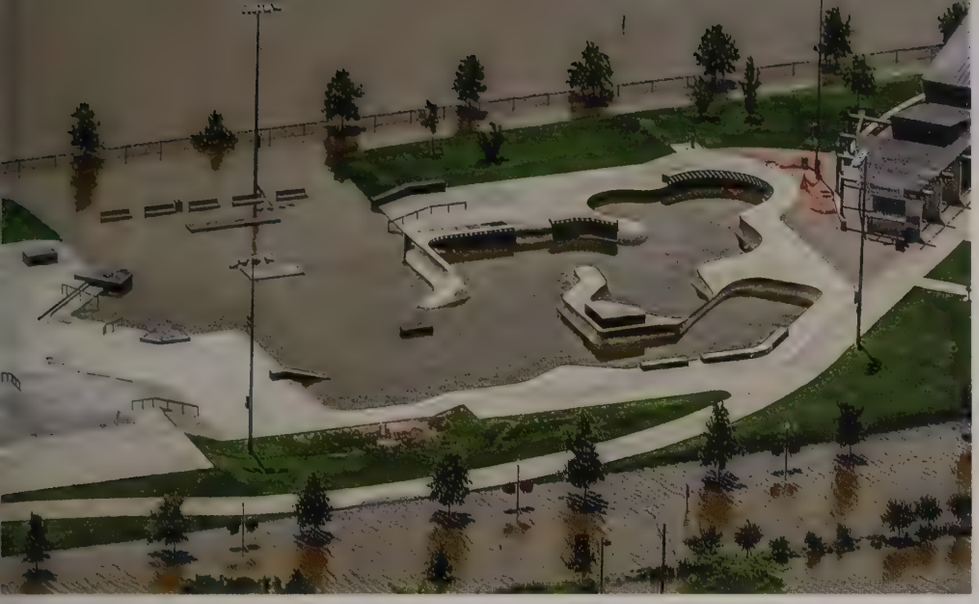
But mitigation is challenging: More demanding than simply rebuilding, it requires rethinking. And after a disaster, it can be a hard sell, especially if it runs counter to a community's desire to quickly return to normal. That's why "designing for disaster" can be such a powerful turn of phrase. It focuses on understanding and working *with* the forces of nature—not standing in opposition to them.

When it comes to designing for the impacts of earthquakes, for example, structural engineers have made great strides combining new technologies with lessons learned over the past 25 years—including those from two greater-than-6.6-magnitude earthquakes, one in Los Angeles and the other in the San Francisco Bay area. Whether today's design solutions feature base isolators, buckling restrained braces, moment frames, fluid viscous dampers, expansion joints, or shear walls, a structure's seismic performance is often just as much about accommodating and dissipating anticipated forces as it is about resisting them. After all, the earth and the ground beneath us are in continuous motion—it's just that most of the time we don't feel it.

Designing for wildfires may be even more illustrative of how we need to embrace and design with an understanding of natural systems. After decades of government focus on prevention and fire suppression, which inadvertently fueled more severe fires, the watchword in wildfire mitigation today is adaptation, or "fire-adapted" communities. This means encouraging residents who live in the wildland-urban interface (akin to a floodplain, or an active fault line) to focus on creating fire-safe environments in the area around their homes. By minimizing fuel sources in the home ignition zone—both on and immediately around a home—communities can increase their defensible space, improving a home's capacity to survive direct flames or radiant heat.

River Bluff Ranch, a development in Spokane County, Washington, was designed with local fire officials from the ground up to withstand a major wildfire. To open up panoramic views for residents and simultaneously reduce fire fuel sources, the area around each home site was thinned out, creating expansive lawns and defensible space. The roads were engineered as fire breaks, and that network accommodates concurrent evacuation and fire access. Utilities are underground, and a series of water storage tanks are readily accessible. Perhaps most important, key principles—such as prohibiting wood shake roofing and otherwise limiting the material in the home ignition zone—are written into the homeowners' covenants and provide a framework for





maintaining a culture of fire safety. In 2016, residents were evacuated because of a nearby fire, but no homes in the community were lost.

Today, no issue is more prevalent or pressing than designing for water: floods, storm surges, sea-level rise, and even tsunamis. Since we all live in a watershed, there is almost always a risk of flooding. Shorelines and coastal regions are particularly vulnerable, since they are where a watershed meets a larger mass of water. The scale and scope of the threat continues to increase as new problem areas—often traced to development patterns that alter natural water retention and runoff—join traditionally vulnerable river cities and coastal communities. Current thinking in water-hazard mitigation includes restoring disrupted natural systems. Whether it's retreating altogether, "making room for the river," elevating structures, or creating living shorelines, these tactics adapt to the ebb and flow of the waters. By redefining the water's edge as a fluid boundary that connects the environment, infrastructure, and public amenities, architects and landscape architects are beginning to revolutionize the way we live with nature.

Davenport, Iowa, is the largest river city in the country without major structural flood protection. Instead, it has opted to "live with" and embrace the Mississippi River. First adopted in 2004 and updated in 2014, RiverVision has redefined the city's edge by strengthening its natural defenses, such as wetlands, and creating an adaptive, multiuse riverfront. Centennial Park, for example, includes elements engineered to slow and absorb water, as a well as a skate park designed to contain floodwaters when necessary. One key to the city's efforts: It now owns 9 miles of riverfront. Davenport's flood protection also includes building-level mitigation. At Modern Woodmen Park, where the minor-league baseball team Quad Cities River Bandits play, an elevated outfield berm and portable flood panels help ensure the field stays high and dry. The city can also deploy a scaffold walkway to bring fans into the ballpark if the surrounding area is flooded.

Remarkably, even the US Army Corps of Engineers, without abandoning conventional flood controls, is investigating nature-based infrastructure as well as strategic retreat. Federal flood mitigation efforts include the National Flood Insurance Program, which subsidizes coverage in communities that have implemented baseline floodplain management. And more comprehensive flood-reduction measures are incentivized through premium discounts. The message is clear: We can design for disaster.

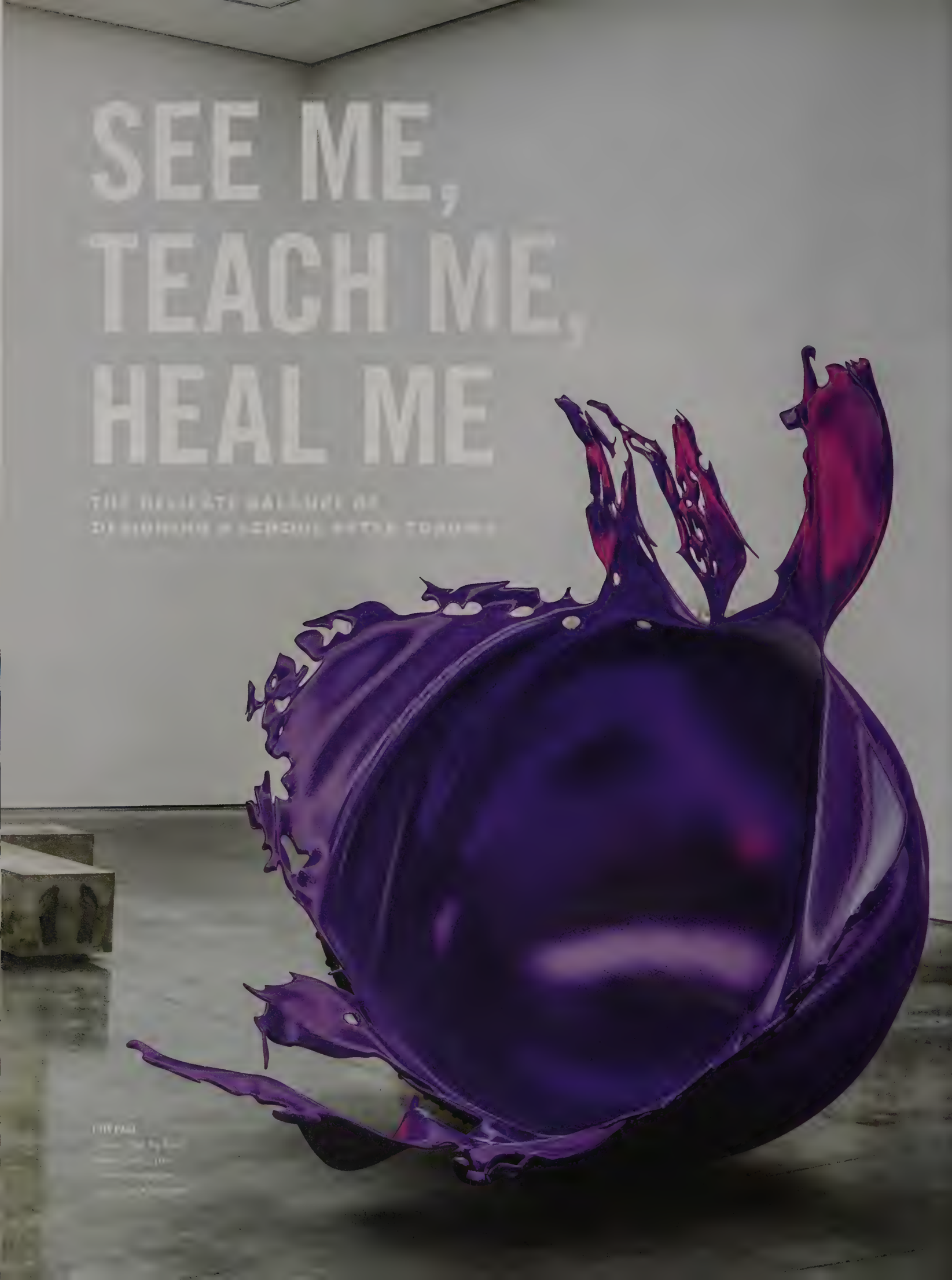
Perversely, I think design professionals sometimes treat mitigation strategies as if they were insider information, only to be used professionally and on the behalf of a client. I'm not so sure we fully capitalize on this knowledge for ourselves, much less for the greater good. Politics aside, even compiling the following grossly abbreviated list of US disasters and tragedies from the past two decades gave me pause: September 11, Hurricane Katrina, Superstorm Sandy, the Boston Marathon bombing, Sandy Hook, the Las Vegas shooting. I'm beginning to think we all need to regain our equilibrium and sense of safety by taking some small, individual steps that can actually decrease our own vulnerabilities—whatever they may be. Only then can we hope to regain a modicum of stability and control on a larger scale.

How, or where, do you start? The Federal Emergency Management Agency (FEMA) recommends preparedness, not mitigation: taking small, relatively low-cost, and responsible steps, such as discussing emergency plans with your family and friends, creating an emergency preparedness kit, or evacuating when requested. Why start there? Because these simple actions can save your life and potentially others within your community. Making a small investment in your safety provides a sense of control that can be liberating and empowering. As it turns out, we are more likely to employ and invest in a mitigation strategy, such as purchasing insurance coverage or making modifications to our home, if we previously prepared for a disaster.

We need to remember that mitigation is the only preemptive phase of emergency management. It is designed to break the cycle of disaster, rather than repeat it. Preparedness, response, and recovery are essentially reactive. Mitigation not only helps save lives, protect property, and reduce losses but also can help individuals, communities, and regions recover more quickly after a disaster. It translates into safer, more resilient communities. ■

LEFT
The end of the 630-foot-long Casino Pier collapsed during Superstorm Sandy, causing the Jet Star roller coaster to plunge into the ocean. Photo: Steve Zumwalt/FEMA

ABOVE
The Centennial Park skate park underwater in July 2014. Photo: John Schultz © *Quad-City Times*/ZUMA Press


SEE ME,
TEACH ME,
HEAL ME



LEFT
A key principle of the school's design is maintaining visual sightlines to allow for natural surveillance of anyone approaching.

BELOW
Tree-themed bulletin boards line the school's main corridor.

Photos: Courtesy Svigals + Partners



by Julia McFadden AIA

In September 2013, my colleagues and I were thrust into the forefront of the discourse on school safety when our firm was selected to design the new Sandy Hook Elementary School—site of the mass shooting of 20 first-grade children and six adults the previous December. At the time, the nation was still stunned by the implications of this tragedy, debating primarily the issues of gun control and mental health. Amid the difficulties of developing a national consensus around these ideologically charged topics, attention turned to the design of schools and the lack of standards for any level of threat, let alone an armed gunman.

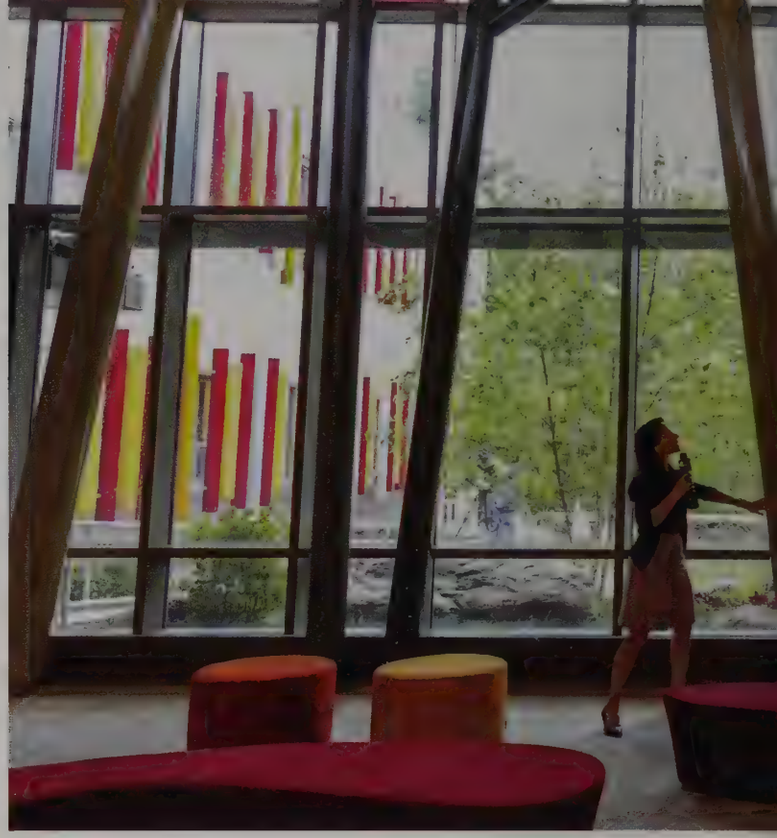
As details of the shooting surfaced, severe counterterrorist tactics were espoused in coffee shops and PTAs across America. First was attention to the borders of the school grounds and the front entry: high, impenetrable fencing and heavy-duty, ballistic-level metal doors and locks, with no glass that would be vulnerable to being shot out—a prisonlike sally port entrance. Next came the realization that the front doors would not be the only way for a heavily armed gunman to gain entry into the school, so there were also calls to limit windows and to place them only up high. For child-development advocates and many educators and parents, these were frightening propositions that suddenly illuminated the inherent dichotomy between designing a facility that is secure from armed threat and creating a place of learning that promotes and nurtures children's cognitive and social development.

This dichotomy centers around our notions of safety and freedom.

Throughout history, the acquisition of knowledge was afforded to those who had the freedom to participate. Advancing civilization from hunter-gatherers into the era of farming and husbandry gave early societies the freedom to spend part of their day in storytelling, passing down knowledge, skills, and values from one generation to the next.

The notion of a formal education arose when even greater freedom from work was attained. Indeed, the word *school* derives from the Greek *scholē*, meaning "leisure" and "that in which leisure is employed." Eventually, a pursuit that once was





LEFT
A mini-amphitheater in the school's outdoor space. Photo: *Reuters*/ Michelle McLoughlin

available only to men of privilege became available to all—the underpinning of America's democratic ideals.

How then to reconcile educational freedom with physical safety? One definition of safe is "to restrict movement," and limiting people's movement in a public space or within a building certainly helps reduce the scope of work for security personnel who can't be everywhere at all times. The days of an open school, where parents and visitors freely come and go all day long, are long gone. Limiting the freedom of children to go anywhere they want is widely accepted, and in fact these days, parents and caregivers are being pressured to monitor children at all times. It is a situation that has begun to reap unintended ramifications, with children lacking the prime opportunities to learn important life lessons, such as autonomy, self-reliance, and negotiation skills with others.

Heavy fortification at a school's perimeter, in the form of a walled enclosure, is not only anathema to the openness and freedoms we associate with education, but it is—ironically, perhaps—a psychological indication that the situation is in fact *unsafe*. Such fortifications not only are prohibitively costly to build but also depend on vigilant monitoring to ensure that the enclosure is not breached. Although a single school facility might invest in a complete circumference of fencing, the prospect of doing so for a large independent school or university campus is a daunting prospect.

It is in this limitation of movement and managing borders where we find the crux of safety versus freedom in the design of an educational campus. One well-regarded set of security measures focuses on perimeter management. Codified with the mnemonic of the 4 D's, these principles are typically handled in layers to *deter*, *detect*, and *delay* the approach of an assailant—and lastly to *defend*. These layers provide multiple opportunities to detect that something is amiss—triggering security personnel to take action, activate the school's lockdown protocols, and alert police—as well as provide enough delay time for first responders to intervene before a tragedy unfolds.

The principles espoused by Crime Prevention Through Environmental Design (CPTED), a multidisciplinary approach to deterrence first developed in the 1970s, provide a design methodology to secure our public buildings and spaces without radically fortifying them. Instead, along with the 4 D's, the first line of defense is simply demarking the borders to denote ownership and make obvious to anyone that he or she is entering an area of surveillance. At Sandy Hook, this demarcation takes the form of decorative low stone





walls at the entry drive, the enhancement of natural features that bound the property, and picket fencing that maintains visual observation while deterring approach. Additional layers were established to organize and manage vehicular approaches, with a decorative entrance gate and intercom, a restricted bus lane, and dedicated visitor parking in clear view from the main office.

At the building perimeter, a key CPTED principle is maintaining visual sightlines to allow for natural surveillance of anyone approaching the school. Furthermore, to keep both pedestrian and vehicular traffic at a distance from the school, a standoff zone was created in the form of a rain garden that runs along the entire front of the school, deterring access to the windows and allowing for daylight to enter while limiting views of the activities inside. This decorative moat additionally serves as a sustainability element that treats rainwater runoff while funneling visitors to only three entries accessed across small footbridges.

One of the bigger challenges in this reconciliation of safety and freedom is the desire for children to have access to the great outdoors. Sandy Hook had a strong history of curricular activities that brought children on nature walks to the local city park. With a beautiful site surrounded by trees and wetlands, we were primed to design a school that could leverage those resources for educational objectives and psychological well-being. Our approach was to create courtyards that felt open but were semi-enclosed. Three outdoor courtyards were created between the wings of the school with the fourth open side secured with locked picket fencing. Inside, connections to nature are reinforced with windows low enough to provide young children with views to their beautiful surroundings, yet safely ensconced behind glazing fortified with a new lamination technology that can withstand a forced entry. Nature themes prevail throughout the design of the school, with metal tree-trunk forms, an artist mobile of shimmering leaves animating the lobby, and tree-shaped bulletin boards lining the gently curving corridor. We kept our focus on the Japanese word for school, *gakuen*, which translates as "learning garden" or "garden of learning."

In a democracy, design can be leveraged for the physical manifestation of our ideals of freedom and equity—a beacon in dark times. It can even, sometimes, redeem a place imbued with tragedy. ■

MIDDLE
The school's lobby evokes nature with abstract tree trunks. Photo: Mark Lennihan/Associated Press

RIGHT
The rain garden runs along the entire front of the school. Photo: Karsten Moran/*The New York Times*/Redux

NO RESERVATIONS

HOW A BANK'S DEFENSIBLE PERIMETER EMBRACES A PUBLIC PLAZA

by Robert J. Adams ASLA

At the end of the 1990s, the Federal Reserve Bank of Boston began to conceptualize a lofty initiative to improve the quality and public benefits of its plaza, which hadn't been substantially altered since its construction in the 1970s. The original plaza design was less a destination or gathering space and more of a passageway, and the leadership at the bank wanted to be a contributing partner in providing quality, accessible outdoor space to attract tenants to its leasable office tower and offer places for the public to gather and unwind. The bank had two other reasons for pursuing a plaza redesign: a perceived need to enhance security after the Oklahoma City and first World Trade Center bombings, and the ongoing construction of the Big Dig, which surgically cut off the front 50 feet of the bank's underground parking along Dewey Square. All these objectives seemed to comfortably coexist.

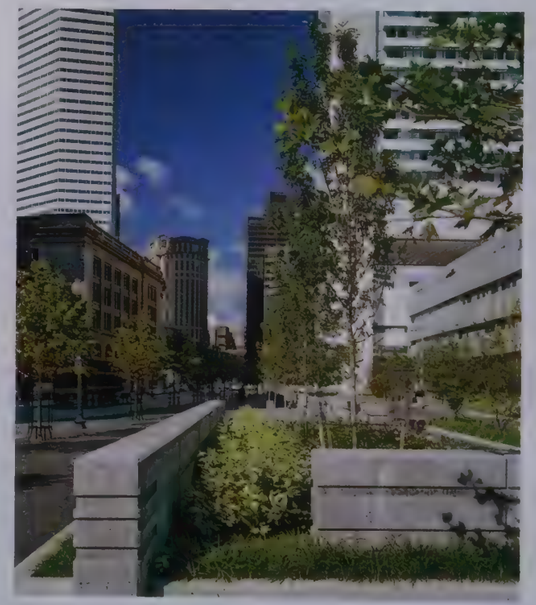
In early 2001, Halvorson Design Partnership, Four Architecture, and a series of subconsultants were hired to design, document, and oversee construction of the improvements, which included a redesigned front plaza, rear and side yard improvements, a reenvisioned public streetscape, updates to vehicular access points, and the construction of a new security checkpoint building, where all vehicles entering the garage would be inspected. But less than a year after beginning the design process, the terrorist bombings of September 11 occurred, and everything changed.

What started as a plan that would bring the plaza up-to-date and respond to the increasing desire for socializing as well as provide a moderate increase in security turned into a project that placed security and barriers above all else. In the early design meetings following the attacks, the desire for security was so high that there were suggestions to wall off the property entirely and create a single access point near the MBTA headhouse for tower tenants, drastically limiting public access. As the process continued, however, the bank returned to a set of objectives more closely resembling the initial concept. Improved public open space could still be a priority as long as it did not negatively affect the safety or security of the tenants, staff, or operations of the bank. This motto would be at the heart of the design process as the project moved forward.

Designed by Hugh Stubbins and Associates (now Kling-Stubbins) and erected in 1974, the bank building is a prominent and familiar resident of our city's skyline, sitting just on the edge of Boston's Financial and Downtown Crossing districts. Its unique massing and "louvered" façade has caused many residents to nickname it "The Washboard." The building is truly a form-follows-function diagram. The tall signature tower set on stilts is accessible to bank employees as well as tenants ranging from law firms to consulates. Its glass lobby—with fountains, hanging artwork, and an indoor garden—faces onto the front plaza and one of Boston's largest public spaces, Dewey Square.

The original design of the plaza included a brick-paved front punctuated by large organic lawn mounds and honey locust trees. The Fort Point–facing open space contained access for underground parking, some surface parking, and a bit of landscape buffer between the sidewalk and parking.

As the team advanced the redesign, a push-and-pull process began to emerge: how to make an open and welcoming landscape while creating a defensible perimeter overlay. In



THE FIX?
The redesigned outdoor plaza of the Federal Reserve Bank of Boston—there is no gap greater than 4 feet around the building's perimeter. Photo: Courtesy Halvorson Design

HERE
A strong tree edge helps define and extend the urban outdoor space of Dewey Square Plaza right to the front door of the bank's tower. Photo: © Anton Grassl/Esto

too many cases, protective measures create poor urban conditions, negatively affecting our streetscapes and public realm. Reduced access, privatization or demarcation of private plazas, and monotonous design character have all been unfortunate outcomes of our need to provide safety. We needed to combat that trend.

The front plaza of the bank plays a supporting role to Dewey Square by providing secondary space for more quiet and contemplative gatherings.

The primary design "parti" of the landscape emerged quickly: Create an extension of the Dewey Square plaza across Atlantic Avenue right up to the front door of the bank's tower by continuing the paver pattern and establishing a strong tree edge to define the northern side of the urban room that encompasses Dewey Square. The remainder of the landscape to the north would be more gardenlike, with a variety of trees, flowering plants, and smaller seating niches. The more generous of the side yards along Summer Street was envisioned to be a widened streetscape with one path for more direct circulation and a secondary path through a grove of trees and plantings that served as a linear gathering space.

The real work became the integration of the defensible perimeter into the overall design parti. The criteria developed by the bank required a continuous line of barriers at a minimum distance from the building in which a gap no wider than 4 feet could exist. This criterion was, at the time, a somewhat stricter version of the defensible perimeter requirements used for US embassies and other federal facilities overseas. The building was set back a safe distance even for vehicles traveling at a high rate of speed that might penetrate the barrier. This is a consistent set of criteria applied to all the Federal Reserve Banks in the country.

The design team's most successful solution is the manner in which the defensible perimeter is integrated into the landscape. We employed two primary design solutions across the site: 1) modulating the horizontal alignment and 2) varying the material, scale, and organization of the defensible perimeter elements. The primary objective was to create a series of barriers that would not detract or dominate the landscape, in the hopes that the actual line often would be imperceptible to the public.

The varying of the horizontal alignment of the barrier line is made possible by the depth of the plaza, where the team was allowed to extend the defensible perimeter further from the building and conversely bring it in as close as possible in other instances. This is especially evident along the Summer Street edge and at the transition from plaza to garden along the front plaza, where the barrier line turns perpendicular to the building. The simple act of turning the barrier line 90 degrees changes one's perceptions; the line of barriers is no longer "a ring around the bathtub" but a dynamic element.





ABOVE AND RIGHT
The northern side of the plaza connects to Dewey Square, while the remainder of the landscape is more gardenlike—an urban arboretum. Photos: Ed Wonsek (above), © Anton Grassl/Esto (right)

TOP RIGHT
The front plaza of the bank provides outdoor space for more quiet and contemplative gatherings. Photo: © Anton Grassl/Esto



The second design solution allows the barriers to become integrated into the landscape. Again, this is best seen in the front plaza, where the large stone wall below the tree edge runs the entire length of the plaza, while a cluster of flagpoles and steel bollards runs perpendicular to the wall. These bollards and flagpoles bridge to a long stainless-and-granite arced bench near the MBTA headhouse. This tag-team solution of varying alignment and scale/material continues around the entire block and allows the overall quality of the initial design parti to shine through and even be in harmony with the defensible perimeter.

The project has its critics, some of whom claim that the front plaza is underused and lacks activation or connection to ground-floor uses, and—despite best efforts—that the barriers are harsh and unwelcoming. These first two criticisms do have some merit. The building, because of its internal uses, has but one primary public access point at the base of the tower. This limited access, coupled with the secure nature of the facility's other uses, does not allow the building's interior and exterior to integrate. However, the main tower lobby is a gem of a space that blends indoors and outdoors as seamlessly as any other building in the city.

The criticism about the barriers is less defensible. Given the strict security requirements and potential for the plaza to become a walled-off zone, the outcome could have been far worse. The best praise for the plaza is the look of surprise when people are told that there is no gap greater than 4 feet anywhere around the entire perimeter of the building.

One further example of the Federal Reserve's commitment to balancing security and welcoming public space has been its continued investment into the care and quality of the trees and plants on the plaza and streetscapes. The grounds are essentially a small urban arboretum, with a grove of sassafras behind the security building, multiple varieties of Styrax, blackgum trees, and a row of dawn redwood flanking the front plaza. A dedicated staff of horticulturalists led by Paul Kelly consistently installs seasonal plantings, monitors plant health, and takes action, as noted by the replacement of the ash trees along Summer Street with technical bare root plantings of disease-resistant elms. In addition, the bank has an extensive art collection within the building and as well as outside, where two public art pieces were relocated to the linear park along Summer Street.

Fifteen years after the completion of the project, the struggle to balance welcoming open space and a secure building continues. While the front plaza of the bank is not the vibrant social and active space that Dewey Square has become, it does play a supporting role by providing secondary space for more quiet and contemplative gatherings. Other recent projects, such as One Boston Place and the Washington Monument in Washington, DC, have incorporated elements similar to the Federal Reserve Bank's design vocabulary to conjure open public spaces that successfully integrate security. It's a prime example of the ways in which designers have positively addressed the opposing ideas of security and access, and perhaps even begun to ease this conflict into a well-designed equilibrium. ■

A CASE STUDY IN COMPLEXITY

AFTER SUPERSTORM SANDY, RECLAIMING THE WATERFRONT IS A MANY-LAYERED THING



THIS SPREAD
Pier 42 completes a critical missing link of public access along Lower Manhattan's East River shoreline. Image: Courtesy Mathews Nielsen Landscape Architects



PROGRAM KEY

1. KNOLL
2. PICNIC LAWN
3. BIKEWAY
4. EAST RIVER ESPLANADE
5. SEATING STEPS
6. MARSH
7. OVERLOOK
8. BUFFER
9. NATURE WALK
10. BRIDGE
11. GROVE
12. RIVER PROMENADE/SEATING
13. LAWN
14. HABITAT RESTORATION
15. PLAYGROUND
16. CONCESSION/COMFORT STATION
17. PIER PAVILION
18. MULTIUSE PLAY SPACE
19. FOUNTAIN PLAZA
20. ENTRANCE GARDEN

by Signe Nielsen FASLA and Molly Bourne ASLA

When Superstorm Sandy hit the Lower East Side of Manhattan in October 2012, it changed the lens through which designers need to approach neighborhoods vulnerable to climate change. The storm surge combined with spring's high tide created a flood event 4 feet higher than any previously recorded storm. In the months that followed, it was evident that relief and recovery alone would not be a sufficient response to this disaster. As landscape architects, we realized we would need to weave education—our own and the community's—into our design process to achieve more robust landscapes that are capable of performing at multiple levels, landscapes that stretch beyond the beautiful and functional to those that strengthen ecological systems.

This is a story about designing a public waterfront park, Pier 42, while managing complexities of information and design triggered by a catastrophic event, trauma, and divergent regulations that contribute to the challenge of building a more resilient city. Pier 42 is located along Manhattan's East River, roughly between the Manhattan and Williamsburg bridges. The Lower East Side is a dense, diverse community with a total population of 72,000. Its shoreline is retained by a stone bulkhead constructed in the late 1800s, roughly 5 feet below the current 100-year floodplain. Not surprisingly, the areas within the city that experienced the worst inundation during Sandy were those built on landfill along the coast, and further inland, where there had once been marshes or streams. Much of the Lower East Side was built on landfill, and floodwaters traveled almost 2,000 feet inland.

Residents who live in low-lying public housing experienced floodwaters filling their basements, ruining electrical power and mechanical equipment. Elevators were shut down, along with heating and cooling systems, refrigerators, and the water supply, making living conditions difficult or untenable. Residents lost access to television and the Internet, leaving them unable

to communicate or gain information. In many cases, they were trapped in their upper-floor apartments.

A few months before Sandy hit, the City of New York tapped our firm to design a park at Pier 42. The space is an 8-acre site made of roughly half landfill and half concrete pier platform on piles in the river. Currently a parking lot and decrepit warehouse, the site is sandwiched between a large public park and promenade, and is separated from the residential neighborhood by a six-lane highway, the FDR Drive. When complete, the park will fill a missing link in the bikeway and waterfront esplanade that circumnavigates most of Manhattan. Our initial concept was to celebrate the river and screen the highway. We began pursuing a design that would offer unique water-related experiences not available elsewhere in the neighborhood.

As part of any public park design in the city, stakeholder engagement is crucial. Between December 2012 and May 2013, we conducted 10 public meetings with the community board, nearby schools, public housing residents, and other local organizations. Neighbors were still reeling from the aftermath of Sandy. During those meetings, conversations often drifted to larger priorities and challenges facing the neighborhood, including protecting critical infrastructure and taking care of vulnerable residents who suffered from building-system outages. When considering the park, many asked for a flood barrier—using the land to protect them. They also wanted the park to strengthen resiliency by softening the shoreline, improving water quality and the natural habitat.

Stakeholder meetings became as much about capacity building as about the project itself. As designers we found ourselves having to explain that a limited length of land form with no inland tie-ins would just allow the floodwater to flow around the park and back into the neighborhood. It became clear that community members were confused by conflicting information regarding flood elevations and the meaning of protection versus risk mitigation. The park design and resiliency became inextricably linked. About a year later, community members selected a scheme that would address a broad array of resiliency measures while simultaneously giving them a unique park.

The design weaves recreational amenities including a playground, picnic knoll, and strolling woodland into a topographic fabric that performs at two scales—community benefit and flood mitigation—by accepting floodwaters into wetlands and tidal pools. By removing deteriorated sections of seawall, river water is welcomed into the park and enhanced by shoreline vegetation and an elevated boardwalk to enable visitors to engage with the fluctuating edge.

The next chapter in the evolving complexity of Pier 42 layers on broader neighborhood resiliency but also new regulations.



RIGHT AND BELOW
Planners propose retracting floodgates to be installed in the narrow areas between FDR Drive and the East River. Images: Courtesy The Mayor's Office of Recovery & Resiliency





LEFT
View toward the elevated picnic knoll showing multiple circulation routes along the water and at higher elevations. Image: Courtesy Mathews Nielsen Landscape Architects

The East Side Coastal Resiliency (ESCR) project originated with the Rebuild by Design competition awarded by the federal office of Housing and Urban Development to the "Big U" concept in June 2014. The Big U was conceived as a coastal flood-protection system around Manhattan to protect the city against coastal and inland flooding, and provide social and environmental benefits to the community. The award came with $335 million in federal disaster recovery funding to implement the first phase of the Big U, which encompasses Pier 42. The ESCR started design in late 2014 with our firm as the landscape architects.

Throughout both the Big U competition and detailed design phases of ESCR, the community's goals remained consistent: reduce flood risk, improve access and connectivity, and enhance open space. Because of its larger project boundary, ESCR solves a key flaw of the Pier 42 park project—the ability to construct a watertight seal around the neighborhood by extending the flood walls inland to tie in to higher elevations. Also, because we are the designers of both projects, we worked to slide the flood wall along the highway to mask its presence and preserve the park's open character. It comes at a neighborhood cost, however: The river will no longer be visible from inland streets.

Furthermore, the engineering requirements for ESCR, a federally funded project that must meet Federal Emergency Management Agency (FEMA) standards, are more exacting both in design and long-term maintenance than those required of Pier 42, a city-funded project. For example, for a landscaped berm to be FEMA-certified as flood mitigation, it must have a reinforced concrete substructure; city standards merely require buildings to be elevated to the current code. So, for Pier 42 we manipulated the topography to achieve the mandated code level and then used the slopes to inspire a dune-themed playground and shaded, promontory picnic area with magnificent views down the river.

In basic terms, the ESCR flood wall is 3 feet higher than the highest land form on Pier 42, which complies with the post-Sandy city building code. Based on current climate projections, the ESCR flood wall will provide twice the number of years of protection than the Pier 42 land form. The ESCR protection system will require a federally defined maintenance regime to ensure its safe operation, whereas the park needs nothing more than routine park care.

At the community level, residents have begun to unleash concerns that previously were voiced only on an issue-by-issue basis: aging infrastructure, basement and street flooding, contamination, and poor water quality. Neighborhoods grappling with resiliency initiatives question whether they will benefit from the promises of more waterfront access, improved parkland, better open space connectivity, and enhanced natural areas.

At the local level, strapped for operating revenue, city agencies do not necessarily embrace costs of long-term maintenance of FEMA-certified projects and drag their feet on decision making, slowing down innovative projects. Municipalities need to encourage federal agencies to recognize local conditions and expand the tool kit of resilient solutions. Every dollar spent on resiliency must be directed toward providing multiple benefits. For example, a flood gate across an inlet can double as a pedestrian bridge to link neighborhoods and offer expanded access to jobs or waterfront parkland.

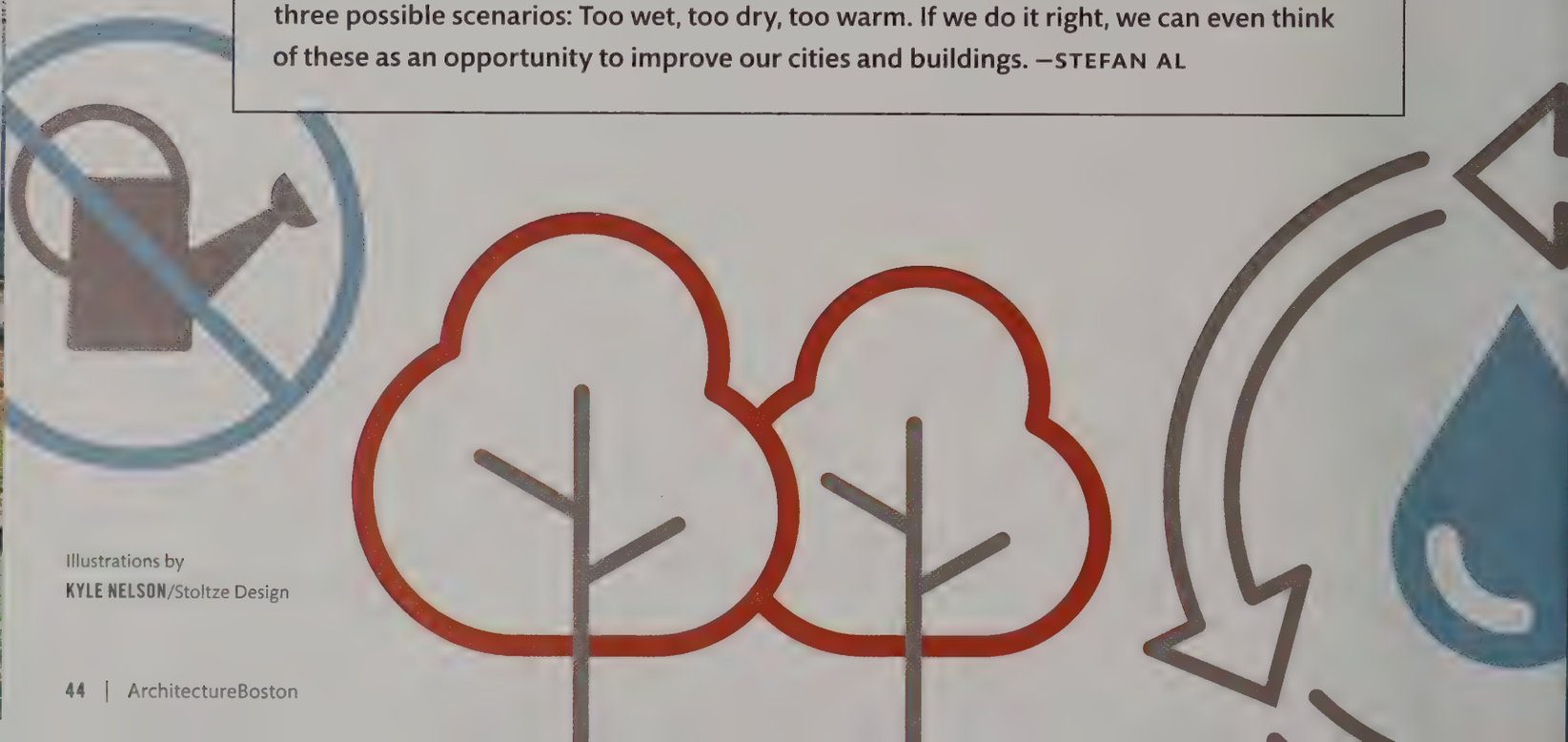
At the federal level, the vast majority of dollars for resiliency implementation in New York City are premised on meeting certain stringent requirements with regard to design and maintenance. A growing concern is that federally promulgated hardening solutions can have negative impacts on communities and impart a false sense of security, potentially leading to complacency about climate change. Imagine living behind a wall, not seeing or smelling the river that you grew up with, but thinking that at least now you are safe from the threat of a storm destroying your home.

Pier 42 is an example of a project that has to manage complexities at multiple scales and ultimately asks the question "What does safe mean?" Do we mean *resilient*—the ability to recover from disaster and adapt to the impacts of climate change? Or do we mean *protection*—fortified by defenses that reduce the effects of disaster? And what does a resident of the Lower East Side think when we use the word *protection*? As designers, we need to do a better job communicating, engaging a broader spectrum of urban challenges, and proposing solutions that offer social, economic, and environmental benefits. ■



A RESILIENCE CHECKLIST

Most scientists agree that climate change will increase the occurrence, intensity, and duration of extreme weather events, including flooding, hurricanes, droughts, heat waves, and wildfires. Architects and city planners can help increase urban resilience—the ability of urban communities to bounce back from shock. This checklist is framed around three possible scenarios: Too wet, too dry, too warm. If we do it right, we can even think of these as an opportunity to improve our cities and buildings. —STEFAN AL



Illustrations by
KYLE NELSON/Stoltze Design

THE PROCESS

1 **IDENTIFY THE RISK**

A risk analysis consists of three essential parts: i. identifying the threat; ii. identifying the assets under threat; iii. assessing the vulnerability of these assets to the threat.

2 **CREATE A RESILIENCE PLAN**

Once the analysis has been conducted, a resilience plan can address this risk. One strategy is to protect by improving the resilience of critical assets, such as power plants, hospitals, or vulnerable populations. Another is strategic retreat, to move away from the risk by making sure no building occurs in areas subject to threats, such as in floodplains.

3 **REZONE VULNERABLE AREAS**

In areas subject to risk, such as those prone to flooding, updated zoning could permanently curb residential construction or make it easier for property owners to flood-proof their buildings.

TOO WET

- ☐ **USE NATURE-BASED SOLUTIONS**

 Dunes, mangroves, and living shorelines can help protect from flooding while also creating natural amenities and promoting biodiversity.

- ☐ **CREATE AN INTEGRATED DIKE SYSTEM**

 Dikes can protect against floods but could potentially limit access to the waterfront; however, they can be integrated with parks, roadways, and buildings.

- ☐ **USE PERMEABLE PAVING**

 Parking lots, roads, roofs, and sidewalks don't need to be obstacles for stormwater to soak naturally into the earth. Porous pavement surfaces help relieve the stormwater system by absorbing rainwater runoff.

TOO DRY

- ☐ **USE NATIVE OR DROUGHT-TOLERANT PLANTS**

 Drought-tolerant species will save water used for landscaping, while native species give the local ecosystem, such as birds and wildlife, more opportunity to thrive.

- ☐ **WASTEWATER DOES NOT NEED TO BE WASTED**

 Wastewater can be recycled for landscaping, industry, or toilet flushing.

TOO HOT

- ☐ **USE TREES AND VEGETATION**

 Trees and plants can help cool the environment. They reduce urban heat islands through evapotranspiration, provide shading on buildings, and reduce the need for air conditioning.

- ☐ **USE PASSIVE SOLAR-DESIGN STRATEGIES**

 Operable windows, thermal mass such as masonry and water, and thermal chimneys can cool buildings the natural way.

FORCE OF NATURE

When a wildfire ravaged his Colorado hometown of Basalt in July this year, Pete McBride, 47, was reluctant to leave his 120-year-old house, fearing it would be the last time he would see the 80,000 images in his basement. After 20 years as a photographer for *National Geographic*, *Outside*, and other magazines, McBride has amassed a formidable archive in the course of traveling to 75 countries.

"As a kid, I loved to be outside and was happy being alone for long periods of time, especially for a 6-year-old. I didn't see the power of the camera until I worked as an intern at a newspaper called *High Country News*, a small publication in Colorado," he said. "I went to Dartmouth and wrote a thesis about grazing livestock on public lands. Then I took some pictures and the newspaper loved the photos before they even saw my story."

McBride has documented everything from the depletion of the earth's natural resources to global cultural moments to feats of adventure and daring. In this last category, he has scaled mountains and traversed canyons, training his lens on and coming close to the edge of human endurance himself. Perhaps it is as an eyewitness to danger and disaster that he finds the greatest grace in the notion of safety and redemption. —Fiona Luis







THE COLORADO RIVER REFLOODING

Running through seven states and two countries, the Colorado is considered the American Nile. With more than 100 dams, the river supplies drinking water to 40 million people. "We have asked too much of the river, and it no longer reaches the sea; its delta is completely dried," said McBride, which has "rippling environmental effects. Those deltas, where they interface with the ocean, make up a giant flyway for birds, which helps protect our crops and keeps insects at bay." It also flushes salt out of the river, which limits the ability to grow crops. In 2014, the gates of Morelos Dam on the Arizona–Mexico border were lifted to allow a "pulse flow" of water into the Colorado. "The human spirit and celebration of that moment, with people in Mexico celebrating a river, was one of the most uplifting things to see," said McBride. "The river's ecological memory jumped back to life. Within 30 minutes you could see little crustaceans swimming in your hand that had been waiting patiently for decades for the water to return. It's symbolic of nearly every watershed system in the world, which are showing signs of contamination, depletion, and over-allocation."

ABOVE
When the river touched the sea for the first time in 20 years, cowboys in San Luis Rio Colorado, Mexico, danced their horses in celebration.

LEFT
Fifty miles south of the US–Mexico border, the Colorado River Delta and its once-rich estuary wetlands are now as parched as the surrounding Sonoran Desert.



"It started because of some foolishness by humans, but anything—even lightning—could have started something like this."

PETE MCBRIDE





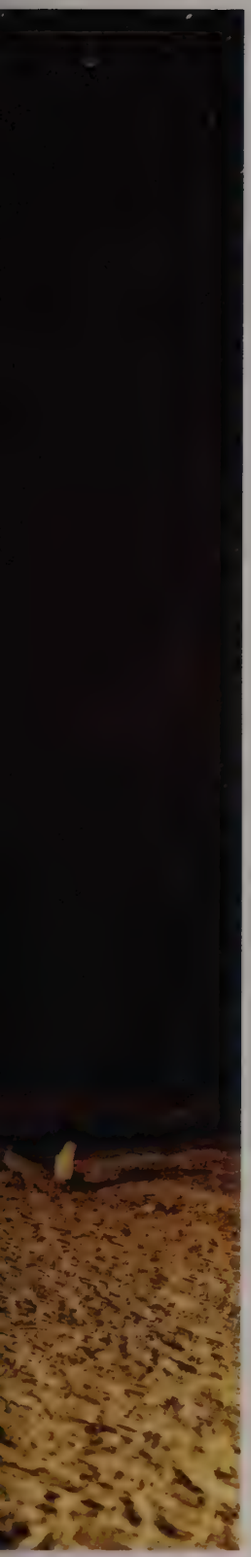
ABOVE
A wildfire is fought on the ground and in the air just ¼ mile from the tourist town of Basalt, Colorado.

LEFT
Slurry flights dropped retardant and water to save the town while ground crews created fire breaks.

THE LAKE CHRISTINE WILDFIRE

On July 3, 2018, a fire began at a shooting range in Basalt, Colorado, McBride's hometown. "Conditions were so dry and temperatures were hotter than ever, so in a way it wasn't surprising," he said. "In the long run, it's probably good, since fire is a natural tool of regeneration for the area." The winds changed a couple of times, and it became challenging to battle the fire. Above the town, slurry bombers dropped red fire retardant, working in concert with helicopters, but "there wasn't enough water, and they were scooping rocks and mud out of the river. We've prevented fire in a lot of these places, where they used to happen naturally. We have tried to control nature for so long that we've prevented natural systems from doing their jobs. We move and develop in these forested areas, then scratch our heads when the fires come." It will take a long time for the forest to come back—the wildfire burned a total of 12,588 acres—but it will come back stronger, said McBride.





LEFT
A Samburu woman outside her traditional Manyatta hut in northern Kenya, where pastoral communities work with conservancies to protect wildlife and create economic opportunities.

BELOW
Loijipu, an orphan black rhino, with his caretaker at Sera Wildlife Conservancy in Kenya, where rangers and antipoaching units watch over the animals.



WILDLIFE CORRIDORS IN AFRICA

For McBride, natural systems don't just support humans, they should support wildlife, too. "We are losing species everywhere, but I recently photographed a success story related to poaching in wildlife, corridors, documenting a group that moves elephants from disaster to safety in Malawi." If we understand that animals naturally move and don't stay in one pocket, he said, "then we establish that wildlife populations have value to local communities. Once you do that, the animals are more inclined to be protected, and locals won't see them as an opportunity for poaching but as a long-term benefit, in terms of tourism and national parks that connect to other parks, allowing animals to move safely." Thus, we help create safety through economic stability and education via protection of the environment, with women in Africa playing a key role. They are "a secret force," he says. For example, Samburu women in Kenya create beadwork that generates income, empowering them to support their families and send their children to school, which helps keep them safe from violence and social instability in their communities.

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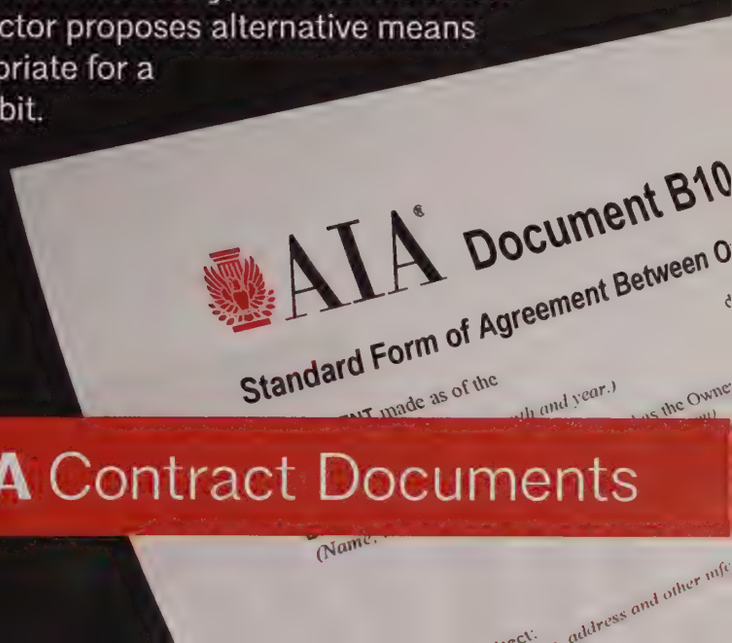
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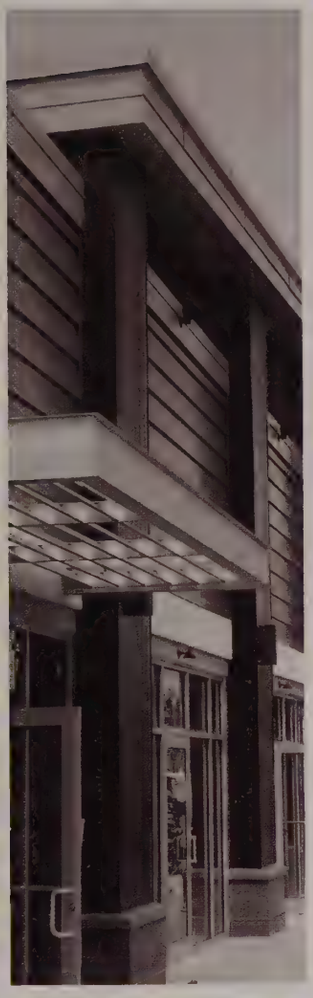
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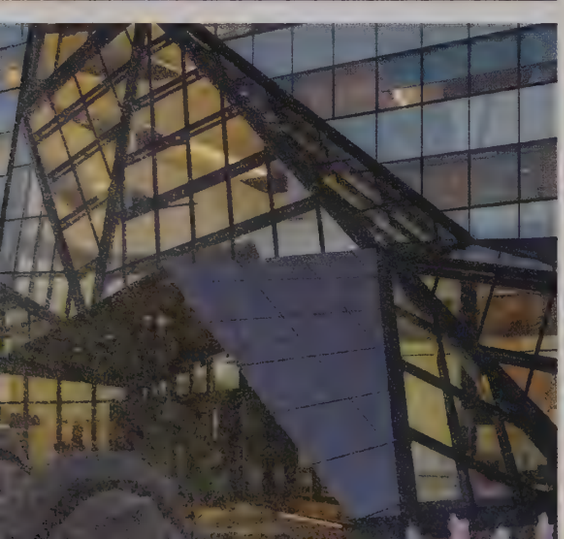














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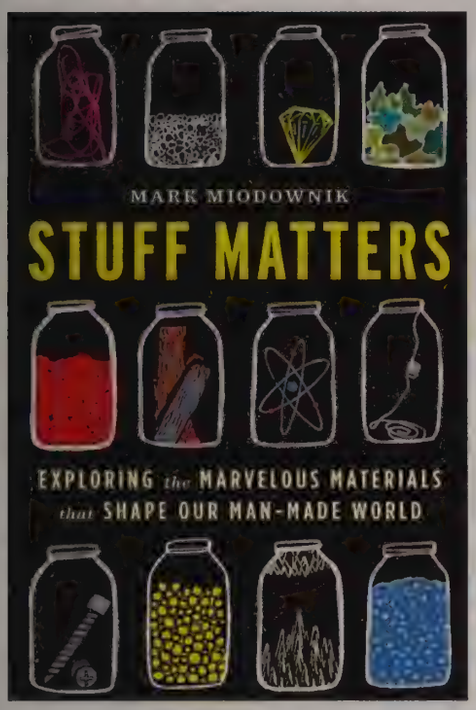




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BOOKS



Stuff Matters: Exploring the Marvelous Materials that Shape Our Man-Made World
Mark Miodownik
Houghton Mifflin Harcourt, 2014
Reviewed by Elizabeth S. Padjen FAIA

In 1985, a British teenager was stabbed on a London subway platform. Of all possible outcomes, no one could ever have predicted the effect on the victim. Young Mark Miodownik became immediately and weirdly fixated on the razor that had sliced his skin and on all its metallic relatives in the world around him: his ballpoint pen, the family car, his soup spoon. And thus was a career in materials science born.

We owe a thanks to Miodownik's unknown attacker. His actions produced a leading scientist who may well have established the gold standard for science writing for a general audience. *Stuff Matters* is a genial, often entertaining presentation of a little-recognized corner of the scientific world through an examination of 10 materials. Miodownik employs a simple organizing device: a photo taken on his rooftop as he sits at a table drinking tea. The image reappears at the beginning of each chapter, annotated to introduce the subject—paper, plastic, porcelain—and its manifestation in such a familiar, banal environment: book, flower pot, tea cup.

Miodownik knows that most people are intimidated by talk of atoms and such. Instead, he expands his focus beyond science to human history, demonstrating the influence of specific materials on societies and cultures, even civilization itself. The Stone Age, Bronze Age, and Iron Age—each represents an era defined by an evolution in materials knowledge.

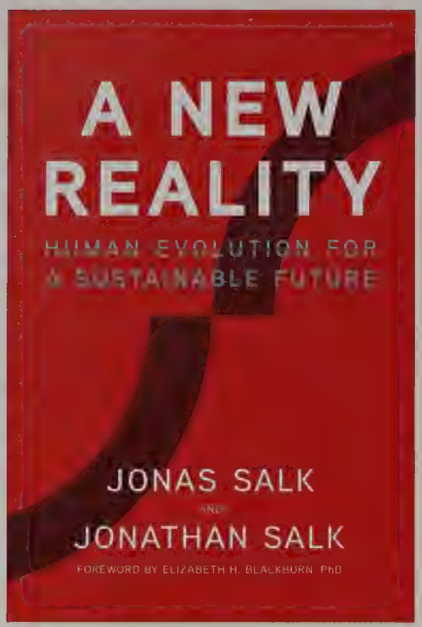
And so we learn that the explosion in popularity of billiards and pool in the mid-1800s led to a race to provide an inexpensive substitute for ivory balls. Happily for elephants, success was at hand in the form of celluloid, an early plastic. Applications soon abounded, from jewelry to photographic film, contributing to the burgeoning consumer culture and spawning further developments such as Bakelite, nylon, and vinyl.

Other romps through materials history are similarly enlightening: the cross-marketing gambit of trade in porcelain and tea; the development of glass as a necessary precursor to scientific inquiry. Glass is also discussed through the lens of "psychophysics," which Miodownik defines as the study of sensual interaction with materials. That Bud Light in your fridge is a descendant of clear beverages introduced when inexpensive glassware replaced pewter and ceramic tankards. We might all otherwise be drinking Guinness.

Architects will certainly perk up with interest in the concrete chapter. Miodownik describes the chemical marvel that is concrete, neatly describing why "cement" is not its synonym. The literal foundation of the Roman Empire, concrete mysteriously disappeared from common use until the development of reinforced concrete in the mid-19th century. It now constitutes half of the world's structures, but designers will soon see the venerable material with fresh eyes. Concrete with embedded bacteria that can purify water and allow self-healing cracks is already here, as are self-cleaning concrete that also cleans the air, and concrete cloth—a durable textile that will attract the attention of sculptors and disaster-relief agencies alike. Chapters on graphite/graphene and foam/aerogel offer similar glimpses into future building materials.

Architecture may be the Mother of the Arts, but it is arguably also the Daughter of the Materials Sciences. The genetic resemblance is certainly strong: Both disciplines require the ability to work fluidly at multiple scales, from the most minute component to the scale of humans, buildings, and even cities. As with any parent and child, the relationship has had its issues. The disappointments and dangers of miracle materials (asbestos, Dryvit) and failures in detailing (galvanic action, mold) all establish a case for caution. But what designer doesn't light up when presented with a new material? Imagining possibilities is the essence of creativity—and the shared passion of both the materials scientist and the architect.

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A New Reality: Human Evolution for a Sustainable Future
Jonas Salk and Jonathan Salk with David Dewane
City Point Press, 2018
Reviewed by Jim Stanislaski AIA

An S-shaped line called the sigmoid curve is the central character in this accessible explanation of our unique point in history. Half a century ago, vaccine pioneer Jonas Salk realized that human population growth could not continue its steep upward trajectory; that it would likely slow and reach a plateau. When graphed, this takes the shape of a curve: slow increasing growth, then rapid growth, an inflection point followed by declining growth, and finally a horizontal line of near zero growth. You and I have recently lived through such an inflection point—this statistical flip of the arc—where the population growth rate slows and then eventually stabilizes to a pace our planet can sustain. *A New Reality* illustrates a sigmoid curve via a simple experiment of fruit flies housed in a closed chamber; their population increases, hits an inflection point, and then stabilizes.

In 1981, Jonas Salk and his son Jonathan explored these ideas in *World Population and Human Values: A New Reality.* Architect David Dewane is credited with the inception of this 2018 update, which was sponsored in part by the Design Futures Council. The authors consider the inflection point in the sigmoid curve as an "epochal transformation" that will drive major changes in our behavior, social systems, institutions, and the very nature of human life.

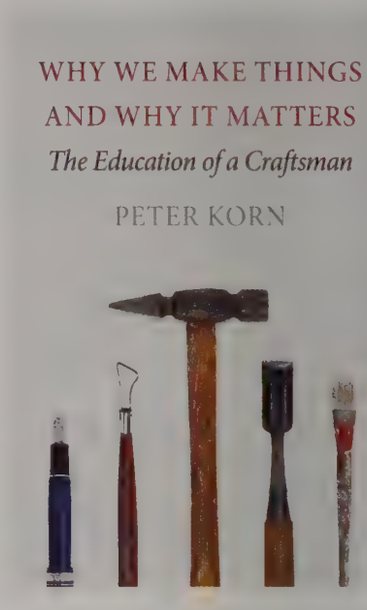
A New Reality splits time into two major epochs on either side of the inflection point of population growth. On the upturned side, Epoch A was a period of unlimited growth, resources, and available energy. It was a period of larger families, colonization, industrialization, and resource extraction with little concern for the effects of consumption and waste disposal. In our current downturned side of the curve, Epoch B is defined by an awareness of earth's limited resources, driving smaller families, conservation, and sustainability.

The more interesting part of the book focuses on the human behaviors and values for each time period. Short-range benefits, profit, and material value characterized Epoch A. Conversely, Epoch B behaviors will reward long-range planning, human value, collaboration, and interdependence. Our largest human problems of poverty, climate change, public health, and feeding a projected 10 billion people will require "B values" of global cooperation and recognition that we are not just individuals but parts of a larger interconnected ecosystem. Our world looks very different to a Depression-era baby, a baby boomer, and a millennial, as each of us is born into unique circumstances that affect our epochal thinking and values.

The book stays high-level, almost to a fault. Data lovers will want more evidence while those in a hurry will be pleased to finish the book in two hours. The design has the feel of a children's book at times, containing two-page spreads with only two lines and fewer than a dozen words. Short paragraphs and declarative statements appear opposite full-bleed photos, and simple graphs with low-information density support the ideas.

In this complex world, there is a thirst for simple explanations, and though I liked the book, I found *A New Reality* a bit short on illustrative examples. Other than the Paris Climate Accord and interdisciplinary university research, what are other instances of global cooperation and the advent of Epoch B values? The Salks' predictions are believable, and I long for a change in our social systems and institutions that embrace Epoch B values because we are, as the book notes, a "fruit flies in a bottle" experiment. Although our lives are longer and generations pass more slowly, we also live in a closed system with all the water, sunlight, and nutrients we are going to get. This is an immutable reality, but it's certainly not new.

JIM STANISLASKI AIA is an architect at Gensler and leads its regional design resiliency group.



Why We Make Things and Why It Matters: The Education of a Craftsman
Peter Korn
David R. Godine, 2015
Reviewed by Sam Batchelor AIA

Engaging in the long-established tradition of extolling the spiritual virtues of manual arts with references to Robert Pirsig's *Zen and the Art of Motorcycle Maintenance* and Matthew Crawford's *Shop Class as Soulcraft*, Peter Korn adds a twist. He links his search for the good life to design as much as making, and renders the role of creative thought as inseparable from the act of making. This is a critical

distinction, one I greatly appreciated as Korn eventually expands his definition of making from objects to the making of communities and institutions.

Although Korn touches on clichéd notions of craftsmanship and its intrinsic rewards, he also supplies the perspective of a mature pragmatist who addresses the need to balance enlightenment with paying the rent. Further, he acknowledges that his life of relative privilege enabled this exploration and that his battles with cancer influenced his perspective and choices.

Equal parts philosophy and memoir, the book follows his path of discovery, beginning with an ideal yet naive approach and building to a more nuanced reconciliation. He describes constructing a reality "independent of intrusive narratives" and then traces how maturity and confidence eventually diminish his need to remain apart and allow the value of collaboration and community to emerge. Without becoming dogmatic, he articulates the time and the place for each approach based on career, experience, and personal need.

Korn is measured when he addresses the pressures of economic stability and efficiencies of production. Although he is clear that commercial success is not a perfect nor singular mechanism to gauge the value of made objects of all types, he concedes that commercial viability does impart a "discipline of relevance" on the maker.

The message I found to be a consistent arc throughout the book was Korn's distinction between happiness and fulfillment: "[They] feel like two distinct states of mind to me, and of the two I find happiness greatly overrated by those who present it as life's ultimate goal....However recalcitrant the universe may be, when I am creatively engaged I have a sense of purpose and fulfillment that makes happiness seem like a bauble."

This approach is one that he delineates early in the book and returns to at each phase in his journey as a maker. About his transition from a craftsman to teacher to administrator, he says, "The raw material with which I work as an administrator changes, too. Instead of being wood or words, it is human nature."

Although the title of the book focuses on making in craftsmanship, the content is more about the value of the creative process. For Korn, this process is rooted in making because it is where he began, but the values he extols as critical to the achievement of fulfillment as opposed to happiness center more around creativity and creation than around the making of physical objects. This distinction dramatically increases the relevance of the book to anyone in the creative fields.

SAM BATCHELOR AIA, a partner at designLAB architects, founded and directs the MassArt Community/Build Studio.



AMID THE RUBBLE, A SWEET SOLIDARITY

by Paul E. Fallon

Safety comes in two varieties. Buildings and barriers provide physical safety from the ravages of nature and terrorist violence, while human connections provide the psychological safety derived from belonging to a tribe. When I traveled to an impoverished land to lend my hand constructing safe structures after a natural disaster, I came away with a deeper understanding of how these two components of safety sometimes reinforce each other and sometimes work against each other.

On January 12, 2010, a 7.0 Richter scale earthquake struck Haiti. Unreinforced concrete frames and sun-baked blocks imploded. Up to 250,000 people died.

On February 27, 2010, an 8.8 Richter scale earthquake struck Chile. There, 500 people died from the quake and subsequent tsunami. Thousands of buildings were damaged, but few were destroyed.

These two events highlight our technical capacity to protect against earthquakes, as well as our failure to apply it universally. A powerful quake in Chile, the nation with the world's most stringent seismic codes, kills 500 times *fewer* people than a quake 60 times *less* powerful does in a country with, essentially, no building codes.

Haiti's earthquake was a tragedy of design and construction; as an architect who had visited the Magic Island, I needed to step up. I volunteered to design an orphanage in the town of Grand Goave, 15 miles from the earthquake's epicenter, then a school. The concept was straightforward: pay Haitian laborers to use traditional construction methods in an earthquake-resistant manner with volunteer technical assistance.

We'd barely begun excavating the complex foundations required for constrained concrete construction when we recognized our need for regular supervision. So I left my job and spent a year oscillating between the poorest country in our hemisphere and the wealthiest nation on earth.

I worked with hundreds of Haitians, often around the clock. We built impressive structures, mixed and poured by hand. In exchange for providing Haiti a morsel of physical safety, I experienced a different way of being. Each night I walked home amidst the sounds of goats, of children, of singing: laughter always within earshot. When I returned home, the plugged-in ears and averted gazes I encountered on the subway seemed so cold.

Haiti is poor by almost every measure, yet Haitians are a proud people. Solidarity of the first Black Republic binds them against all external forces. Mother Nature killed 5 percent of its people; yet I never heard one Haitian complain, "Why us?" Haitians accept hardship; they endure. I cannot help but wonder—Would we Americans be as resilient in the face of comparable disaster?

Our orphanage and school provide nurturing places for children to learn, to grow. But they also provide a physical haven for Grand Goave's citizens as the community's refuge from mudslides and hurricanes. They enhance the psychological safety of the entire town.

In the United States, with building codes nearly as stringent as Chile's, death from earthquake is unlikely (1 in 130,000, according to the Cato Institute). We're preoccupied instead with protecting ourselves from foreign terrorist attacks (1 in 45,000) and mass shootings (1 in 11,125). Physical safety is often at odds with psychological safety. Almost everything we do to make us physically safe from terror (increased security guards, bollards, fences, controlled entries) diminishes the sense of community essential to psychological safety. They divide us rather than unite us.

Rebuilding Haiti provided difficult challenges of logistics and money. In our nation, where these fundamental issues are easier to address, our challenges—social and political—can be even more difficult to resolve. How do we architects create safe spaces that draw us together rather than keep us apart? How do we root our design in common ground? ■



PAUL E. FALLON is an architect and author of *Architecture by Moonlight*. His most recent book, based on a 48-state bicycle odyssey, is *How Will We Live Tomorrow?*

LEFT
The construction of the Mission of Hope School in Grand Goave, Haiti. Photo: Mission of Hope International

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